The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII. CHICAGO, ILLINOIS, MAY 25, 1907. No. 21.

Original Articles

MEDICAL LEGISLATORS OF TWO REPUBLICS.

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CINCINNATI.

FRANCE AND THE UNITED STATES.

There are ninety-two physicians in the two houses of the present French Congress—the Ninth, elected last year.

There were four physicians in the two houses of the last Congress of the United States—the Fifty-ninth, that expired by limitation in March, 1907.

These facts are mentioned in distinct paragraphs for the purpose of emphasizing the contrast, in this particular, between the two great republics of the world. This contrast becomes all the more striking when it is remembered that the population of France, in 1906, was 38,228,969, while that of the United States for the same year, the estimate being based on the census of 1900, was approximately 85,000,000.

I have no recent figures as to the number of physicians in France, but I have a distinct recollection that a few years ago it was quoted at 28,000. The number of physicians in the United States in 1906, according to the "American Medical Directory," the official medical directory of the United States, just issued by the American Medical Association, was 122,167. These figures bring into even more striking contrast conditions which, considered in relation to each other, amount to a sociologic phenomenon.

THE MEDICAL LEGISLATORS IN THE TWO COUNTRIES.

A study of this phenomenon is of interest not only to sociologists in general, but more particularly to American physicians who are more or less acquainted with the personnel of the medical profession of France and who have some knowledge of the cities and people and, consequently, of the political constituencies of that country. But before giving the names of the various medical representatives and their constituencies it may be of interest to state that the French Congress, like the American Congress, is composed of two houses. The upper house in France, like that in this country, is called the Senate, while the lower house, corresponding to our House of Representatives, is called the Chamber of Deputies. The French Senate has 300 members, of which 40 are physicians; the American Senate consists of 90 members, of which one is a physician. The French Chamber of Deputies has 595 members, of which 52 are physicians; the American House of Representatives has 386 members, of which, in the Fifty-ninth Congress, 3 were physicians.

THE PERSONNEL OF THE TWO DELEGATIONS.

Now let us consider the personnel of the medical delegations as found, respectively, in these two great legislative bodies.

In the French Senate are Goujon (Ain), Gacon (Allier), Vagnat (Hautes-Alpes), Trezoul (Ariege), Gauthier (Aude), Ouvrier (Aveyron), Flassieres (Bouches-du-Rhône), Blanchier (Charente), Combes (Charente-Inférieure), Dellestable and Labrousse (Corrèze), Ricard (Côte-d'Or), Villard (Creuse), Denoix and Peyrot (Dordogne), Saillard and Borne (Doubs), Lannelongue (Gers), Lancet (Gers), Lourties (Landes), Reymond (Loire), Vigier (Loiret), Rey (Lot), Pettijean (Nièvre), Labbé (Orne), Bataille (Puy-de-Dôme), Pedebidon (Hautes-Pyrénées), Gauthier (Haute Saône), Guillemaret (Saône-et-Loire), Trancoz and Chautemps (Haute-Savoie), Piettre (Seine), Boularan (Tarn), Rolland (Tarn-et-Garonne), Ligallis and Clemenceau (Var), Parisot (Vosges), Lordereau (Yonne), Gérente (Alger), Aubry (Constantine).

In the Chamber of Deputies are Buzonet (Ain), Thiorier (Allier), Isoard (Basses-Alpes), Durand (Aude), Hugon (Cantal), Roy (Charante-Inférieure), Ravier (Cher), Lachand and Rouby (Corrèze), Santelli (Corsica), Baudet (Côtes-du-Nord), Clament, Sireyjol, Pourleyron and Sarrazin (Dordogne), Evesque (Drôme), Dubuisson (Finistère), Chapius (Jura), Laurent (Loire), Vazeille (Loiret), Dudouyt (Manche), Pechadre and Pozzi (Marne), Chapuis (Meurthe-et-Moselle), Defontaine and Dron (Nord), Beaudon, Delpierre and Chopinet (Oise), Cachet (Orne), Delilas-Fanien and Morel (Pas-de-Calais), Sabatiere and Chabige (Puy-de-Dôme), Pujade (Pyrénées-Orientales), Cazeneuve (Rhône), Dubreff and Simyan (Saone-et-Loire), Empereur (Savoy), Levraud, Brousse, Vaillant and Meslier (Seine), Delbet (Seine-et-Marne), Amodru (Seine-et-Oise), Joyeux-Laffuie and Cibiel (Vienne), Vacherie and Boutard (Haute-Vienne), Villejean (Yonne), Duquesnay (Martinique, de Mahy (Réunion).

In the United States Senate is Gallinger (New Hampshire). In the United States House of Representatives (Fifty-ninth Congress) were Barchfeld (Pennsylvania), Burton (Delaware), Samuels (Pennsylvania).

Information as to the personnel of the newly elected Sixtieth Congress is not yet available. It is known, however, that Burton and Barchfeld have been re-elected.

WHO'S WHO?

Now, who are these men? What is their status, individually and collectively, socially and in the profession of their respective countries? Are they really representative men either professionally or politically?

Have they shown capacity as legislators and administrators? These are important questions, for it is only in the light of correct answers to them that the desirability of medical representation in the legislative bodies can be determined.

First, then, as to France. To begin with, it may be asserted that the entire delegation is a distinguished one; for, to be a member of the *corps legislatif* of France is, of itself, a distinction. And what is true of France, in this particular, is equally true of America. But in France there are other distinctions, some carrying with them tangible insignia. Thus, something over a hundred years ago, an order was established, membership in which was, and is yet, conferred as a reward for military and civil services of extraordinary merit. A conspicuous act of bravery in war may bring the prize at once, but it is conferred in times of peace only after twenty years of distinguished service, either military or civil. This is the great Legion of Honor, to be a chevalier of which may well be the ambition of any man. It may be of interest, therefore, as showing the position of the French medical legislators in their own country, to state that about one-third of them—to be precise, twenty-nine out of the ninety-two—wear the coveted cordon, recognized the world over as the insignia of honor. Another distinction, created in 1808, that of *officier de l'académie*, with the insignia of double palms, conferred on *littèrateurs* and *savants*, is held by a score or more members of the medical delegation. A number of them have foreign decorations, showing that these medical legislators, many of them at least, are prophets honored not only in their own country, but beyond its confines. And let it be understood, furthermore, that these honors come, not as meaningless expressions to favored friends, but as merited recognition for things done, labor rendered and results achieved.

PROFESSIONAL DISTINCTIONS OF THE FRENCH DELEGATION.

But if these results have been achieved, if these things have been done, they who have achieved and done them must, of course, be otherwise known of men. And so they are, many of them at least. There are at least twenty-five of the names given that appear repeatedly in each volume of the *Index Medicus* for the last twenty years. Anybody can see them who may take the trouble to make the reference. It would be impossible in this short article to give the bibliography of all of them, and to give that of one without that of others would be invidious. Some have professorial distinctions. There, for instance, is Cazeneuve, who is a member of the faculty of the world-famed medical school at Lyons and one of the most constant contributors to the *Lyon Médicale*. And there is Adrièn Pozzi, who is professor of surgery at Reims after having been *agrégé* for years at Paris. He was one of the collaborators on the well-known work on gynecology issued several years ago by his celebrated elder brother, Professor Samuel-Jean Pozzi, of Paris, who, by the way, was himself a senator in the second Congress preceding the present one. Both Pozzi and Cazeneuve are in the Chamber of Deputies, where they have for colleagues such men as Laurent, the leading surgeons at Roanne, where he is chief of the *maternité;* Villejean, who is a *professeur agrégé* at Paris; Sabatier, who is a writer on ophthalmologic subjects; Pujade, whose work on "The Practical Cure of Tuberculosis" was crowned by the Academy of Medicine of Paris; Dubief, who is an alienist of distinction; Dron, whose contributions on cancers of the eye have commanded general attention; Isoard, whose labors in connection with original hygienic investigations at Marseilles are generally quoted; and there are doubtless others in this same body who are equally entitled to mention, but whose achievements I do not happen to know.

If we turn to the Senate, we find an equally gratifying range of professional distinctions. There are Labbé, whose long service at the Beaujon and as *professeur agrégé* at Paris brought him the merited distinction of the presidency of the national surgical society; Peyrot, the distinguished surgeon, whose works, "Diseases of the Chest and Abdomen" and "Manual of External Pathology" are authoritative; Saillard, director of the medical school, professor of surgery and chief of the hospitals at Besançon; Lannelongue, whose "Lessons in Clinical Surgery" is one of the best known works in France; Borne, a *leuréat* of the Medical Faculty of Paris, which accorded him the Corvisart prize; Reymond, another *lauréat* of the Paris Faculty, who is a well-known writer on bacteriology and surgery; Goujon, also a *lauréat*, whose writings on physiologic subjects are quoted both in and out of France; Blanchier, who conducted some of the earliest and most important original experiments on salicylate of soda; Rolland, who has followed up the work of Charcot in psychiatry; Parisot, an authority on pediatrics, whose labors in the popularization of vaccination and for the protection of infants of earliest ages places him in the category of philanthropists; and, finally, there are Combes and Clemenceau, both physicians, the former a writer on psychology, both of whom are such conspicuous characters in the world as to require special mention, even in the short space of this article.

COMBES.

Combes was a former, as Clemenceau is the present, premier of France. Justin Louis Emile Combes was born at Roquecombe (Tarn) in 1835. After graduating in medicine and letters he settled in Paris. He took up psychology as a special study and wrote an interesting work on the psychology of St. Thomas Aquinas. He drifted into philosophy and historiography, on which topics he made numerous valuable contributions. His political career began, like that of many physicians in France, by being elected mayor of the town in which he lived. That was in 1876. Nine years later he went to the Senate.

From that date he has been a national figure in France. The laws of primary education; those relating to instruction in Algiers, and to the higher education of the Mussulmans in that country; measures for the construction of the French navy; others for the regulation of the railroads, are a few of the subjects that bear the stamp of his individuality and show the range of his versatility.

His great achievement, however, was the abolition of the concordat that had long existed between France and the Vatican. He began this while he was a minister of public instruction in the so-called Bourgeois cabinet (1895-1896); he kept it up while in the cabinet of Waldek-Rousseau (1899-1902), and finally carried it into effect in the cabinet of which he himself was premier (1902-1905). This great achievement—the separation of church and state in France—was probably one of the greatest revolutionary steps ever effected in any country, and probably the only revolution in the history of France, of equal moment, so well conceived that its

execution was effected without the shedding of blood. The master hand in this great *coup d'état* was Combes, the physician.

CLEMENCEAU.

Then came the short-lived cabinets of Rouvier—short lived, apparently, because they contained no physician to protect them, although Dujardin-Beaumetz, an artist who was under-secretary of state, had a name familiar to medical ears. But when Sarrien, who followed, was forced by ill health to retire as premier, President Fallières requested Dr. Clemenceau to organize a ministry—the one now in office. This remarkable man, Clemenceau, deserves more than a passing word. Born in 1841, he graduated in medicine at the age of 28, and he seems to have entered almost at once on a political career. He began, of course, as mayor, and presided over Montmartre during the dark days of the commune. After the war with Germany he, as a member of the National Assembly, assisted in the reconstruction of the government. President of the Municipal Council, secretary of the Chamber, recognized parliamentary leader of the extreme left, Senator and President of the Council (*Premier*) are the chief offices that he has held in succession. In the meantime he has established and conducted several newspapers, *La Justice*, *Le Bloc* and, finally, *L'Aurore*, through which, successively, he has promulgated his strong anticlerical convictions. He is to-day carrying to completion the great reforms inaugurated by Combes, and is himself inaugurating policies which, if successful, will give the people of France a larger control over public utilities and a larger share in the proceeds derived from the natural resources of the country. Strong, courageous, magnetic and always a fighter for his convictions, that is Clemenceau, the physician.

OTHER MEDICAL CABINET OFFICERS.

But there are other members of the present French Congress who have done duty in the cabinet. Thus, for example, Chautemps, now Senator from the Haute-Savoie, was a member of the Ribot cabinet in 1898. The Deputy from Réunion, de Mahy, has served in the cabinets of Freycinet (1882), Fallières (1885), Tirard (1887), and has served since as Vice-president of the Chamber. Vigier, Senator from Loiret, has seen duty in a half-dozen cabinets.

OTHER POLITICAL ACTIVITIES OF FRENCH PHYSICIANS.

The examples of Combes and Clemenceau demonstrate the capacity of physicians for the various phases of public life in France. Nearly all of them have begun as local councillors, each in the *commune* in which he lives, or in the *canton* or, possibly, in the *arrondissement*, the three grades of local government boards peculiar to that country. As a matter of fact, just sixty-five of these physicians have, at one time or another, served as members, often as officers, of the Council. Then, too, a goodly number of them have been mayors; it seems, indeed, as if the mayoralty is the stepping stone from the Council to Congress. But it is interesting to see the number of French cities, and important ones, too, that either have or have had physicians for mayors. Marseilles, Reims, Dijon, Lyons, are among the more important, while members of the present Congress embrace former mayors of Donjon, Briançon, Varilhes, Sijean, Mur-de-Barrez, Pons, Guéret, Peyriac, Saint Hippolyte, Auch, Aire, Châteauneuf, Saint-Denis, Catus, Louhans, Crepy, Campagne-les-Hesdin, Arlac, Pont-du-Château, Cluny, Chamarande, Rançon, Fort-de-France, Annecy and about twenty-five others. It would seem from this that medical men in France shoulder and carry their full share of the burden that falls, or should fall, on all alike in a great republic such as theirs and ours.

AMERICAN MEDICAL LEGISLATORS.

Now let us turn to the contrasting picture furnished by the United States. Four physicians in the Congress of this great country! Fortunately, we have to apologize only for the smallness of the delegation. The "who's-who" inquiry can be made with resulting qualification. Thus, Dr. Jacob H. Gallinger, Senator from New Hampshire, was a practicing physician in Concord and for many years enjoyed a reputation that extended over the larger part of New England. He began his political career as a representative in his state legislature in 1872. He has since served as a member of a constitutional convention, surgeon-general of his state, representative in Congress and, finally, United States Senator. Dr. Andrew Jackson Barchfeld, representative from the Thirty-second Pennsylvania District, graduated in medicine in 1884, and is a surgeon of prominence in Pittsburg, where he resides, being a member of the staff of the South Side Hospital of that city. He is a member of professional organizations from his county society to the American Medical Association. Dr. Hiram Rodney Burton, representative-at-large from the State of Delaware, has been for thirty-five years a practitioner of medicine in his native town of Lewes, and in every way identified with the activity and welfare of his county and state. Dr. Edmund William Samuels, the representative from the Sixteenth Pennsylvania District, is another active practitioner of medicine who has served his community in various public capacities before coming to Congress. Illustrated biographic notices of these four conspicuous and honored members of our profession will shortly appear in THE JOURNAL. It is with a desire not to forestall interest in these notices that more is not said in this connection. It is, however, proper to state that, while the medical profession of the United States, as compared with that of France, in the matter of participation in national legislation, has occasion to blush, its chagrin arises from disparity in the number rather than in the quality of its representatives.

COMPENSATION OF CONGRESSMEN IN THE TWO REPUBLICS.

The great interest that medical men in France display in matters of state can not be accounted for on the basis of compensation received. The pay, or the "indemnity," as it is called in France, is only 9,000 francs, or about $1,800, for both Senators and Deputies, while the pay in the United States is 37,500 francs, or $7,500, in both branches of Congress. It is not germane to our subject, but it will do no harm to observe that members of the British Parliament serve entirely without compensation, and that the medical profession always has liberal representation in that body. Certainly with these wholesome examples before us it must be apparent that, relatively speaking, the medical profession of the United States is not doing its full duty in these higher activities of American citizenship. May the future accord us a better record!

SOME MEDICAL MEMBERS OF STATE LEGISLATURES.

I have found it practically impossible to get a list of all the physicians who are members of state legislatures.

I am convinced, however, that, if fully compiled, it would be long enough to show that the members of our profession are beginning to take an increasing interest in the legislative affairs of their respective states. The list is subjoined. Additional names will be published as rapidly as they are received.

PHYSICIANS IN STATE LEGISLATURES.

ALABAMA.

NAME.	RESIDENCE.	OFFICE.
G. T. McWhorter	Riverton	Senator
M. C. Ragsdale	McCalla	Representative
J. R. Vann	Abbeville.	Representative

INDIANA.

M. M. McDowell	Vincennes.	Senator
Evan L. Patterson	Brookville.	Senator
L. T. Cox	Napoleon.	Representative
A. W. Portor	Loogootee.	Representative
H. G. Read	Tipton.	Representative
Charles E. Scholl	Camden	Representative
John W. Vizard	Pleasant Mills	Representative

ILLINOIS.

M. D. Fostor	Olney	Representative

IOWA.

E. W. Clark	Grinnell	Senator
J. A. DeArmand	Davenport	Senator
J. A. McKlveen	Charlton	Senator
Henry Young	Manson	Senator
James F. Clark	Fairfield	Representative
Jesse D. Elliott	Hawleyville	Representative
P. M. Jewell	Decorah	Representative
Charles L. Marston	Mason City	Representative

KANSAS.

E. F. Richardson	Onaga	Representative

KENTUCKY.

A. D. James	Bowling Green	Representative

DELAWARE.

Thomas O. Cooper	Wilmington	Representative
John W. Messick	Georgetown	Representative

CONNECTICUT.

Junius F. Smith	Brookfield	Representative
F. I. Nettleton	Shelton	Representative
Noah Wadhams	Goshen	Representative
George K. Knight	Lakeville	Representative
William L. Higgins	South Coventry	Representative
C. H. Pendleton	Hebron	Representative

MINNESOTA.

H. H. Witherstine	Rochester	Senator
John H. Dorsey	Glencoe	Representative

MISSISSIPPI.

Carroll Kendrick	Kendrick	Senator

MISSOURI.

Frank DeVilbiss	Spring Garden	Senator
Frank P. Young	Kirksville	Representative
Joseph P. Porth	Jefferson City	Representative
I. Phillips	Buffalo	Representative
Numa R. Holcomb	Oak Grove	Representative
Walter E. Gibson	DeSota	Representative
E. M. Roseberry	Neosho	Representative
Thomas B. Cook	Rayville	Representative
S. J. Wade	Benton	Representative
R. H. Hanson	Hartville	Representative
Golburn H. Wilson	St. Louis	Representative

NORTH DAKOTA.

J. D. Taylor	Grand Forks	Senator
J. W. Sifton	Jamestown	Senator

NEBRASKA.

Frederich Wilcox	Hubbell	Senator
W. G. Fletcher	Orchard	Representative
F. A. Marsh	Seward	Representative

NEW HAMPSHIRE.

George H. Saltmarsh	Lakeport	Senator

NEW YORK.

Frank M. Boyce	East Schodack	Senator
Fred A. Dudley	King Ferry	Senator
Orlando W. Burbyte	Brookfield	Representative
W. Lovell Draper	Wilson	Representative
Samuel A. Glück	Brooklyn	Representative

OHIO.

NAME.	RESIDENCE.	OFFICE.
William M. Denman	West Unity	Senator
J. W. Guthrie	Manchester	Representative
A. J. Crawford	Glouster	Representative
Young Stephenson	Georgetown	Representative
L. M. McFadden	Washington C. H.	Representative
Wm. Curtis Whitney	Westerville	Representative
John H. Criswell	Marion	Representative
F. F. Demuth	Cecil	Representative
George B. Nye	Waverly	Representative
Edwin B. Harper	Clinton	Representative

COLORADO.

B. L. Jefferson	Steamboat Springs	Senator
G. D. Dulin	Las Animas	Representative
A. B. Harbison	Aguilar	Representative

OREGON.

Wm. G. Cole	Pendleton	Senator
O. C. Smith	Portland	Senator
J. N. Smith	Salem	Senator
B. H. McCallon	Dallas	Representative
H. B. Belknap	Prineville	Representative
Geo. H. Merryman	Klamath Falls	Representative

PENNSYLVANIA.

Daniel P. Gerbrick	Lebanon	Senator
Edwin M. Herbst	Oley	Senator
W. C. Miller	Bedford	Senator
Charles B. Quail	Auburn	Senator
John W. Bowman	Lemoyne	Representative
Rein K. Hartzell	Allentown	Representative
J. S. Hunt	Easton	Representative
J. S. Krebs	Northumberland	Representative
John M. Martin	Grove City	Representative
E. S. Meals	Harrisburg	Representative
E. E. McAdoo	Ligonier	Representative
W. W. Sprowls	Houston	Representative
C. L. Stevens	Athens	Representative
E. P. Weddell	Scottdale	Representative

SOUTH DAKOTA.

—— Michals	Gettysburg	Representative

SOUTH CAROLINA.

Olin Sawyer	Georgetown	Representative
J. H. Saye	Yorkville	Representative
C. T. Wyche	Prosperity	Representative

TENNESSEE.

Z. D. Massey	Sevierville	Senator

TEXAS.

J. A. Todd	Parker	Representative
R. W. Chapman	Geneva	Representative
Ralston	No address	Representative

WASHINGTON.

J. I. Pogue	Alma	Senator
C. G. Brown	Spokane	Senator
H. C. Fulton	Asotin	Representative
J. W. Cloes	Tacoma	Representative

WISCONSIN.

J. H. Noble	Eau Claire	Senator
Thomas A. Miller	La Crosse	Representative
Wesley Irvine	Manawa	Representative

WHY IS IT AS IT IS?

But why, the question of "pay" or "indemnity" aside, do so many French physicians go to Congress? And why do so few American physicians seek entrance to our great national legislative assembly? No man may answer these questions with any pretention to accuracy. There is so much in the antecedents, traditions, laws, customs, temperaments—in the blood, if you please—of the two peoples, so much of a determining character that it is impossible in this connection, even to survey the whole question.

But there are a few obvious facts that may throw a little side light on the situation and that may be mentioned without offence to either party. The facts relate chiefly to ideals, and let it be remembered that ideals determine the destinies not alone of persons but of peoples. But to illustrate: When the Frenchman exclaims *"Ma Patrie!"* he probably throws more passionate patriotism into the expression than does the American who sings of "My Country." Of course, I am not now speaking of times of great national crises, when the depths of patriotism are stirred by the possibilities of impending calamity. But the meaning of this differ-

ence is that, under ordinary every-day circumstances, the demands of his country are more imperative to the Frenchman than are the demands of America to Americans.

Then, too, in France every man, the physician as well as his neighbor, dreams of the day when he shall become a *rentier* or a retired man. And he not only dreams of it, but he labors for it, economizes and saves to hasten its coming. His ambition for wealth is not great, but his longing for independence and emancipation—emancipation from the cark and care of pills, potions and patients—is irresistible. The time arrived, he, or many of him at least, takes not to idleness and dissipation but to the realization of something bigger, better and broader that is within him. In sympathetic touch with society, having felt its pulse literally as well as figuratively, he knows of its hopes, aspirations, wants and woes as no other man knows them. So quite naturally he takes to live functions, and from being a doctor he becomes something more than a doctor. Having achieved rational independence on a basis of modesty and contentment, he seeks to be a man among men, to live not by moping days, but by pulse beats and heart throbs and to do those things that will make him spoken of by his children and his children's children. So there are ninety-two of him in the present French Congress.

Now, let us turn to our own beloved country and to our still more beloved profession—the best country and the best profession on the footstool. And let us counsel frankly and honestly among ourselves. In the first place, have our educational methods of the past been conducive to the highest ideals, professional and civic? With us has a profession been accepted as a means or an end? Frankly, how many of us look beyond our daily round to a larger and broader activity? How many of us have seriously considered the duty devolving on us to carry the intelligence we have acquired in the innermost recesses of hovel and mansion, of cottage and palace, and to exercise that intelligence in the halls of legislation for the benefit of the people who have trusted us? And how many physicians are there, cultivated, able men, with homes in our beautiful cities or farms in our verdure-clad villages, ample for their old age, who could discharge these duties with signal ability? Will they do it? Shall we not see them in greater numbers in our state legislatures and in our national Congress? None can do it better! And may we not take a lesson from France?

THE QUESTION OF REWARDS AGAIN.

And there is something worthy of the striving in public life. Only recently the Honorable William H. Taft, the present distinguished Secretary of War, in an eloquent appeal for the higher class of recruits to the service of state and nation, said:

> Assuredly there is a career in the public service. One may not prophesy for every man commendably ambitious to enter it that he will end an ambassador, but there is abundant opportunity for useful work. A good head and good health are necessary, with the disposition to work hard. There are opportunities on every hand for men to distinguish themselves by service of eminent value. As to rewards. I do not talk of rewards. For the class of men to whom I would have the idea of public service appeal, the matter of rewards would be irrelevant. I say to you that there are rewards which are unknown to him who seeks only what he regards as the substantial ones. The best of all is the pure joy of service. To do things that are worth doing, to be in the thick of it, ah! That is to live. The poor man who chooses this way will have to live plainly, as things go nowadays. At least he won't pile up a surplus of wealth. Why should he want to? We used to be told in a homely adage that a millionaire had no advantage over a poor man in his capacity for food and drink. Wealth provides small satisfactions, but not deep ones. It can give no felicity like that which comforts the man who has identified himself with something bigger than himself, which thrills the heart of the patriot, of the public servant.

THE EXTERNAL PREPARATIONS OF THE UNITED STATES PHARMACOPEIA, VIII.*

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CHICAGO.

Since presenting this subject to the Section on Pharmacology and Therapeutics four years ago,[1] the revised Pharmacopeia has appeared, and it affords me much pleasure to observe that the formulas for the external preparations therein have been revised in conformity with the principles advanced in that paper.

As observed at that time, the formulas for preparations for external use had been made up entirely from pharmaceutical considerations; that is, such substances were selected for vehicles as would afford the most stable, the smoothest and otherwise pharmaceutically the most satisfactory ointments. The revision of the U. S. P. afforded an opportunity to bring these preparations into accord with the generally accepted ideas of modern dermatologic practice, and it is firmly believed that the new Pharmacopeia in respect to the formulas for the various classes of these preparations is abreast of all other pharmacopeias.

OINTMENTS.

The following tentative classification was at that time presented for the ointments as being the most important class and as having the greatest number of preparations:

1. *Epidermatic.*—Non-penetrative, or non-absorptive. Protective, antiseptic. Vehicle: Soft paraffin, vaselin or petrolatum, U. S.

2. *Endermatic.*—Semi-penetrative or semi-absorptive. Emollient, nutritive, astringent, etc. Vehicle: Animal or vegetable fats, oils and waxes. Lard, suet, oils of almond, olive, etc.

3. *Diadermatic.*—Penetrative or absorptive. Systemic or constitutional. Vehicle: Lanolin or hydrated wool-fat.

From the following table it will be observed that this scheme has been closely adhered to in the selection of the vehicles for the official ointments, except that in many of the endermatic group the vehicle is a mixture of lanolin and petrolatum. Such a mixture has about the same penetrating power as the animal and vegetable fats and oils, but, unlike these, does not become rancid and is not acted on by ordinary chemical reagents. Thus the two mercuric oxids which are prepared with this vehicle are not reduced as when prepared with animal and vegetable fats and oils, but are preserved in full strength and without becoming rancid.

The yellow mercuric oxid ointment, reduced to 2 per cent., much used by ophthalmologists, by the official process may be so thoroughly levigated as to present almost as fine a state of division as when made by the original Pagenstecher method; that is, from the freshly

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. The External Preparations and Their Therapy, THE JOURNAL A. M. A., April 11, 1903.

precipitated mercuric oxid (in its nascent state). It has been used by C. P. Pinckard for years with great satisfaction.

The same vehicle should be used for the mercuric nitrate ointment (citrin) to prevent reduction of the mercuric salt, but, in deference to conservative opinion that the elaidin produced by the reaction of nitric acid on the lard in the old process enhanced the stimulating property of the ointment, the old formula was retained. The use of anhydrous wool-fat, Adeps lanæ, U. S. P., permits the employment of water for the most thorough levigation of insoluble agents, such as the mercuric oxids or for the solution of water-soluble salts without reducing the consistence, besides admitting the often valuable addition, water—to the ointment.

Lanolin, Adeps lanæ hydrosus, U. S. P., may also be substituted for suet in the mercurial ointment when diadermatic or systemic effect is desired; on the other hand, petrolatum is used to dilute Unguentum hydrargyri dilutum U. S. P., since this is intended to be used only as an antiparasitic under the name of "blue ointment." Lanolin can not be used in conjunction with ordinary fats or oils as a vehicle for alkalin salts, because the latter are more or less saponified, but lanolin, being a cholesterin, is not saponified and the result is a non-homogenous mixture lacking consistence. This is why lanolin is not adapted as a vehicle for potassium iodid and similar agents where otherwise its use would seem to be indicated.

PREPARATIONS FOR EXTERNAL USE (SOLID AND SEMISOLID) GROUPED ACCORDING TO THEIR THERAPEUTIC PROPERTIES.

Properties.	Title of Preparation.	Active Agent.	Per Ct.	Vehicle in 100 Parts.
Protective	UNGUENTUM	None.	..	Benz. lard, wax.
Emollient	Aquæ rosæ	Rose water	19	Oil almond exp., waxes.
Antiseptic	Acidi borici	Boric acid	10	Petrolatum, paraffin.
Antiseptic	Iodoformi	Iodoform	10	Lard.
Antiseptic	Phenolis	Phenol	3	White petrolatum.
Astringent	Acidi tannici	Tannic acid	20	Ointment, glycerin.
Astringent Antiseptic.	Diachylon	Lead plaster	50	Olive oil.
Astringent antiseptic.	Zinci oxidi	Zinc oxid.	20	Benz. lard.
Astringent antiseptic.	Zinci stearatis	Zinc stearate	50	White petrolatum.
Anodyne	Belladonnæ	Ext. bellad. leaf	10	Benz. lard, lanolin.
Anodyne	Stramonii	Ext. stramon	10	Benz. lard, lanolin.
Alterative	Hydrargyri	Mercury	50	Benz. lard, suet.
Alterative	Hydrarg. ammoniati	Merc. ammoniat.	10	White petrolatum, lanolin.
Alterative	Hydrarg. oxidi flavi	Merc. oxid, yellow	10	Petrolatum, lanolin.
Alterative	Hydrarg. oxidi rubri	Merc. oxid, red	10	Petrolatum, lanolin.
Alterative stimulant	Hydrargyri nitratis	Mercuric nitrate	10	Lard (Elaidin).
Discutient	Iodi (KI, 4)	Iodin	4	Benz. lard, glycerin.
Discutient	Potassii iodidi	Potass. Iodide	10	Benz. lard, water.
Antiparasitic	Chrysarobini	Chrysarobin	6	Benz. lard.
Antiparasitic	Hydrarg. dilutum	Mercury	33	Petrolatum.
Antiparasitic	Picis liquidæ	Tar	50	Lard, yellow wax.
Antiparasitic	Sulphuris	Sulphur (washed)	15	Benz. lard.
Counterirritant	Veratrinæ	Veratrin	4	Benz. lard, oil almond exp.
Protective	CERATUM	None.	..	Benz. lard, wax, white petrolatum.
Antiseptic	Camphoræ	Camphor linim.	10	Benz. lard, wax, white petrolatum.
Antiseptic astringent.	Plumbi subacetatis	Liq. plumb. sub.	20	Lanolin, paraffin, petrolatum.
Discutient	Resinæ	Rosin	35	Lard, yellow wax.
Discutient	Resinæ compositum	Rosin	22.5	Suet, yellow wax.
		Turpentine	11.5	Linseed oil, 13.5.
Vesicant	Cantharides	Canthar. pulv.	32	Liq. petrolat. 15, lard 17, yellow wax 18, rosin 18.
	EMPLASTRUM:			
Protective	Plumbi	Lead oleate	100	
Protective supportive	Adhesivum	Rubber, petrol.	2	Lead oleate.
Anodyne	Belladonnæ	Ext. bella. leaf	30	Adhesive plaster.
Anodyne	Opii	Ext. opium	6	Adhesive plaster.
Alterative	Hydrargyri	Mercury	30	Lanolin 10, lead plaster.
Discutient	Saponis	Soap pulv.	10	Lead plaster.
Rubefacient	Capsici	Oleoresin	0.25	15 sq. cm. adhesive plaster.
	SUPPOSITORIA:			
Cathartic	Glycerini	Glycerin	..	Soap (sodium stearate).
	Rectal, 2 gm.	Prescribed	..	Theobroma oil.
	Urethral, 2 gm.	Prescribed	..	Glycerinated gelatin.
	Vaginal, 10 gm.	Prescribed	..	Glycerinated gelatin.

CERATES.

The cerates being intended solely for external effect, their vehicles have been selected chiefly from non-penetrating substances, petrolatum, etc. This is of advantage in several, notably in the cerate of subacetate of lead, which, made by the new formula, keeps indefinitely, while formerly the fats and oils were saponified and the cerate quickly became rancid and unfit for use.

In the cantharidal cerate, maceration of the cantharides with liquid petrolatum acts as a dissolvent on the active principle, making the cerate more effective, besides having the advantage over a volatile solvent, such as the formerly employed oil of turpentine, in keeping the cerate of a soft consistence to facilitate spreading of the plaster, or "blister."

PLASTERS.

The old-time plasters, consisting of gum resins, oleoresins or the so-called pitches, having been superseded by the more stable and convenient rubber plasters, the formula for the resin plaster was revised so as to furnish an adhesive plaster having the desirable qualities of the rubber plaster without the disadvantages. As I have formerly observed, the rubber plasters serve excellently adhesive and protective purposes and are useful as vehicles for rubefacient or irritant effects, but are practically inert for plasters of which medicinal or penetrating effects are desired. The vehicle for the commercial rubber plasters, consisting of a mixture of rubber and orris powder, with smaller proportions of resins or gum resins, is incapable of penetrating the skin and, therefore, can not exercise any deep-seated effect, such as is required of belladonna. In this way plasters generally fell into disrepute with physicians who rarely ever prescribe them now except for adhesive purposes.

Believing that the plasters are a desirable form of medication for many therapeutic purposes, besides those purely superficial, these medicated plasters are prepared by admixture with the new and improved adhesive plaster so as to be easily spread on any ordinary cloth or fabric, such as canvas, by means of a heated spatula.

The quantity of the plaster-mass used should be suffi-

cient completely to cover the cloth within the prescribed area, leaving a narrow margin, and should be of such thickness that the fabric may be entirely obscured when the plaster is viewed through the light. On the other hand, mercury plaster, if desired for continuous application, may be spread on gauze, like the plaster mulls of Unna (see Unguenta Extensa, National Formulary), in order that evaporation may proceed freely through the pores of the fabric and thus maceration of the cuticle be prevented.

SUPPOSITORIES.

While since its introduction, first in the Pharmacopeia in 1870, theobroma oil leaves nothing to be desired as a vehicle for rectal suppositories, clinical experience suggests that a non-fatty vehicle is preferable for suppositories for urethral and vaginal use. Gelatin seems to be the most appropriate substance for this purpose, and in the form of gelatinum glycerinatum U. S. P., leaves nothing to be desired. This is a gelatinous mass of equal parts of gelatin and glycerin, practically anhydrous and non-hygroscopic it is perfectly stable and may be kept sterile if properly protected for any length of time.

The U. S. Pharmacopeia defines suppositories according to their shapes and weights as follows:

Rectal.—These suppositories should be cone-shaped or spindle-shaped and when made from oil of theobroma should weigh 2 gm., or 30 grains.

Urethral (Bougies).—These should be pencil-shaped, pointed at one extremity, and either *short*, 7 cm., 2 4/5 inches, in length, weighing about 2 gm., or 30 grains, or *long*, 14 cm., 5 3/5 inches, in length and weighing 4 gm., or 60 grains, when made with glycerinated gelatin. If prepared with oil of theobroma they should be about one-half these weights.

Vaginal (Globules).—These should be globular or oviform and weigh about 10 gm., or 150 grains, if made with glycerinated gelatin, and about 4 gm., or 60 grains, if made with oil of theobroma.

Rectal suppositories were defined as of 1 gm. weight, but this weight, being a reduction of one-half of former pharmacopeias (30 grains), was never adhered to. The molds of 30 grains (2 gm.) in weight continued to be in use, so that there has been practically no change.

The glycerinated gelatin is more than twice as heavy as theobroma oil, which accounts for the greater weights of the suppositories when made with glycerinated gelatin. The urethral suppositories are also of two lengths. The particular vehicle to be used for the three different kinds of suppositories is not directed in the Pharmacopeia, it being deemed preferable to leave the choice to the prescriber, although preference is indicated or rather suggested.

The only objection to the glycerinated gelatin vehicle is that the suppositories can not be made very well without the use of bisected molds, and these are expensive. The short urethral suppositories may be formed by pouring the melted mass on the cutting brasses of a pill-machine and pressing it in cylindrical lengths. Gelatin is not adapted to tannin, forming a hard, insoluble, leathery mass. While glycerinated gelatin being anhydrous is free from this objection, forming a homogenous mixture with tannin, it is apparent that when the suppository comes in contact with the water-secretions it will remain a hard insoluble mass.

Suppositories require, as a rule, 25 per cent. gelatin to insure their proper consistence, so that the mass from which the suppositories are molded is prepared from one-half its weight of glycerinated gelatin, the other half its weight consisting of the medical agent and glycerin. Water-insoluble substances, such as iodoform, zinc oxid, bismuth compounds, etc., are levigated (triturated finely) with the glycerin and mixed with the melted glycerinated gelatin and poured into molds, thus:

℞.	Iodoformi	grs. xv	1
	Glycerini	3ii ¼	9
	Gelatini glycerinati	3iiss	10

Fiant suppositoriæ urethrales, No. x.

Water-soluble substances are dissolved in the glycerin, or in a little water replacing as much glycerin, and then mixed with the previously melted glycerinated gelatin. If a firmer consistence is desired a portion of the glycerin may be substituted by as much acacia mucilage, thus:

℞.	Morphinæ sulphatis	gr. ii	1
	Zinci sulphatis	gr. iiiss	2
	Aquæ sterilatæ.		
	Mucilaginis acaciæ, āā	3i	5
	Gelatini glycerinati	3iiss	10

Fiant suppositoriæ urethrales, No. x.

The morphine sulphate and zinc sulphate are dissolved separately, each in one-half the water, mixed with the mucilage, and this mixture is incorporated with the melted glycerinated gelatin and poured into molds.

The above formulas also illustrate the use and great convenience of glycerinated gelatin for preparing the Glycero-gelatins of the National Formulary.

DISCUSSION.

DR. W. J. ROBINSON, New York City, said that in Germany the preparation of dermatologic products is a specialty. They do a tremendous business. Any pharmacist can prepare these preparations.

PROF. C. S. N. HALLBERG said that there is a great field in this line and pharmacists ought to take advantage of it. There is no reason why the pharmacist is not able to do the same thing that the German pharmacist does. These preparations have been further simplified in the National Formulary. The first article that attracted Professor Hallberg's attention to the subject, he said, was a paper by Dr. Thomas F. Reilly, New York, about eight years ago.

ISOAGGLUTINATION OF HUMAN CORPUSCLES

WITH RESPECT TO DEMONSTRATION OF OPSONIC INDEX AND TO TRANSFUSION OF BLOOD.*

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By isoagglutination of human corpuscles is meant clumping of the corpuscles of one person by the serum of another person. Its occurrence is demonstrated readily by incubating for one or two hours mixtures of defibrinated or citrated blood or of corpuscles and serum. It is often seen in opsonic work in which serum generally constitutes one-third of the mixtures. For purposes of demonstration, it is well to add serum, say 0.1 c.c., to 1 c.c. of a 2.5 or 5 per cent. suspension in salt solution of citrated or defibrinated blood. Clumping is here easily seen. When citrated or defibrinated bloods are mixed, agglutination may be obscured by the mass of corpuscles so as to be recognizable only under the microscope, hence dilutions are desirable.

Landsteiner and, following him, Descatello and Sturli,

*From the Memorial Institute for Infectious Diseases.

have shown that individuals may be separated into three groups by means of isoagglutination, namely: (1) Those whose corpuscles are not agglutinated by the sera of Groups II and III but whose sera agglutinate the corpuscles of Groups II and III; (2) those whose corpuscles are agglutinated by the sera of Group III (and Group I) and whose sera agglutinate the corpuscles of Group III; (3) those whose corpuscles are agglutinated by the sera of Group II (and Group I) and whose sera agglutinate the corpuscles of Group II (see table). Of 76 persons whose blood I have studied, 36 belonged to Group I, 26 to Group II, and 14 to Group III. Of the 14 in Group III 6 were without any agglutinin, hence it appears that about 90 per cent. of all individuals possess isoagglutinin of one kind or another. The blood of the 5 persons represented in the table has been examined at frequent intervals during several months and constantly with the results indicated, except that the serum of one of the persons in Group III gradually lost its agglutinin.

TABLE SHOWING ISOAGGLUTINATIVE GROUPING OF FIVE PERSONS.

Sera \ Corpuscles	I (1)	II (2)	II (3)	III (4)	III (5)
I (1)	O	+	+	+	+
II (2)	O	O	O	+	+
II (3)	O	O	O	+	+
III (4)	O	+	+	O	O
III (5)	O	+	+	O	O

EXPLANATION.—0.1 c.c. of each of the 5 sera were added to 1 c.c. of a 2.5 per cent. suspension of the corpuscles of each of the 5 persons, and the results recorded after placing the mixtures at 37° C. for 2 hours. O = no agglutination; + = agglutination.

There is no striking alteration in the agglutinative grouping of persons with various diseases, more particularly pneumonia, typhoid fever, scarlet fever and advanced pulmonary tuberculosis.

That human isoagglutinins are bodies with special affinities for the corpuscles on which they act is evident because corpuscles absorb only the agglutinins by which they are agglutinated. The corpuscles of Group I do not absorb any agglutinin—are not agglutinable—and corpuscles are immune to the agglutinins in their own serum. Three main agglutinins are distinguishable, the agglutinin of Group I for the corpuscles of Group II and III; the agglutinin of Group II for the corpuscles of Group III, and the agglutinin of Group III for the corpuscles of Group II. Others no doubt occur occasionally. Thus, in Group III there not infrequently is interagglutination.

The amount of agglutinin varies considerably in sera from different persons, and corpuscles of the same group vary in their agglutinability by the same serum; furthermore, sera of Group I may contain different amounts of agglutinins for Groups II and III.

Human agglutinins are stable bodies; they resist heating to 60° C. for thirty minutes, pass through porcelain filters, and persist for months in serum kept in the icebox. They are distinct from the isohemopsonins in human serum.

From the practical point of view isoagglutination of human corpuscles is of immediate interest in connection with the determination of the opsonic index and with transfusion of blood. All who have worked with the opsonic index are familiar with the fact that occasionally their mixtures show marked clumping of the erythrocytes which naturally interferes more or less with the desired accuracy. In order to avoid this annoyance the washed blood (leucocytes) should be secured from an individual of Group I, i. e., from one whose corpuscles are not agglutinable. Hence it is well to determine the isoagglutinative grouping of the regular frequenters of a laboratory that are likely to be asked to furnish blood for this purpose.

By means of a refined technic Crile† recently transfused blood from normal to diseased human beings, and with apparent success. The occurrence of isoagglutinins in human blood suggests that under special conditions homologous transfusion might prove dangerous by leading to erythrocytic agglutination within the vessels of the subject transfused. It has not been possible to conduct animal experiments on this point because of failure to demonstrate isoagglutinins in the serum of suitable animals. It may be pointed out, however, that the possible danger here indicated can be avoided by the selection of a donor whose corpuscles are not agglutinated by the serum of the recipient and whose serum does not agglutinate the corpuscles of the latter; that is to say, donor and recipient should belong to the same group and preferably to Group I or II. The actual isoagglutinative relation of the donor and the recipient are readily determinable in a short time in the manner already outlined.

† THE JOURNAL A. M. A., Nov. 3, 1906, p. 1482.

DANGER SIGNALS FROM THE SKIN.*

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Unconsciously the skin receives a good deal of attention from the general practitioner in connection with many disordered or diseased conditions of the system, and yet when the skin itself becomes diseased many physicians seem to lose sight of its relation to the general system, and regard and treat it only locally; and this happens often, much to the detriment of the patient, and too frequently with unsatisfactory results in regard to the cutaneous affection.[1]

One need only mention the exanthemata to suggest at once that phenomena on the skin may be only one evidence of disease, while the dry skin of fever and the sweating at a crisis and in tuberculosis show the important part which the skin has in the economy, and many such illustrations will occur to all.

Although we may not recognize it, nor be conscious of it, the skin eventually plays a most important part in health, especially in the direction of regulating the heat of the body. The every-day observation of the effects of a chilling of the surface, resulting in many internal diseases, emphasizes the importance of the skin as a vital organ, while the effects of extensive burns, producing profound shock and often attended with ulceration of the intestine and suppression of urine, and even

* Read before the Medical Society of the State of New York, Jan. 29, 1907.

1. Relations of Diseases of the Skin to Internal Disorders, Rebman & Co., New York, 1906.

frequently followed by death, show that the skin has vital relations, of the greatest importance with the rest of the body.

Further, the condition of the skin and its appendages, both in men and animals, is continually taken as an indication of the state of the general system, and, as we know, may often prove a valuable index as to how metabolism and nutrition are performed. The cachexia of anemia and malignant disease is often surely shown by the skin, as is also that of functional or organic disturbance in many organs.

The purpose of this paper is to call attention to some of the relations of the skin to the general economy, and especially to some "danger signals" occurring in connection with certain manifestations of disease on the skin, which often may not be sufficiently considered.

SYPHILIS.

Beginning with syphilis, all perhaps know that this disease, which is principally recognized through its manifestations on the skin, when insufficiently treated, may be the cause of most serious lesions in many organs, through which it may bring lamentable disaster or death. And yet my experience leads me to believe that the profession at large does not fully appreciate the fact, or at least that patients are not sufficiently warned of it to prevent these rather frequent occurrences.

Twenty-five years ago I read a paper[2] on "The Malignancy of Syphilis," giving many instances of its dire effects. Owing to a more enlightened profession and public, resulting in better and more prolonged treatment, as generally employed since that time, there are probably now not the same proportion of cases exhibiting severe and dangerous lesions of internal organs, as formerly. Still, daily observation and the records of literature show that, as a disease, syphilis still makes frightful ravages into the health and life of the community.

The limits of this paper do not permit of much elaboration of separate subjects, much less the report of illustrative cases, but the importance of syphilis, as a disease whose possible outcome under unfavorable circumstances can result most disastrously, can not be overestimated and must be briefly considered.

The danger signal from the skin, in syphilis, therefore, should never be neglected, for the knowledge given thereby may often prove to be the key to many subsequent difficulties. Both in the early and late stages of the disease there are dangers to almost every organ of the body, and the knowledge of previous syphilitic infection may often check disease processes of a most threatening character. Many cases of incipient locomotor ataxia can be prevented, many cases of chorioiditis ending in blindness, many cases of brain tumor, and various woeful results of syphilitic endarteritis, as also disease of the heart, liver and kidneys, etc., can be averted by prompt and vigorous treatment based on a recognition of a syphilitic cause.

How inexcusable, therefore, it is for a physician to treat infection with syphilis as a light matter, and not to warn thoroughly or, if necessary, even to frighten the patient into a proper appreciation of the need of treating the disease until it is thoroughly cured. Many of us who know syphilis feel that such brief, violent treatment as is often given at various mineral springs is responsible for much ultimate harm, by leading patients to believe that they have had a "cure" and to thereafter neglect all remedial measures until, perhaps, some obscure internal result of the infection has progressed beyond the power of relief.

Innocent syphilitic affection, which may occur in a thousand different ways,[3] should never be forgotten, and when the danger flag is distinctly recognized on the skin the warning should be heeded quite as much as when the patient acknowledges a sexual transgression. Indeed, the ill omen should be more strongly regarded, for all who have seen much of extragenital infection agree that those cases often prove the most serious as regards later harmful effects of the poison. This is equally true of marital and hereditary syphilis.

ECZEMA.

While eczema is so often regarded and too frequently treated as a wholly local disease of the skin, often without success, in certain cases it gives signals of danger of no uncertain character. These if heeded result to the best interests of the patient and the cure of the disease, but when, if disregarded, may result most disastrously.

Generalized eczema, or that affecting many localities, is almost always a sign of nervous or physical breakdown, and a most careful study of the patient in every particular will often reveal gross errors in life or habits, which, if unchecked, will lead to direful results. Localized neurotic eczema[4] of the hands, or about the mouth, will also often indicate a nervous strain to which the patient may otherwise succumb unless properly attended to. Eczema about the eyes is sometimes due to eyestrain or errors of accommodation which call for special attention.

But eczema is also not infrequently met with in those of full, plethoric habit, with a hard, bounding pulse, showing metabolic errors which may lead to kidney disease or even apoplexy if not controlled by proper measures. Again, many cases exhibit a weak, flabby pulse, indicating anemia or a greatly debilitated system, ready to succumb to disease, unless restored to a normal vigor by appropriate treatment.

We see, therefore, that eczema may sometimes be a blessing in disguise, if its danger signals are recognized, properly regarded, and correctly interpreted.

ACNE.

Many look on acne as only an unpleasant accident, annoying to young persons, and hardly meriting much professional attention. But acne is often a danger signal which it is not wise to ignore. It is frequently the sign of grave metabolic disturbances dependent on gross errors of diet and hygiene, and often associated with constipation and gastric disorders, which lead to serious consequences if unchecked. In many instances it is due almost wholly to anemia, and is often one of the first signs of breakdown from overstudy and confinement, or from a combination of these and society dissipation. The cold and clammy condition of the hands and feet, so constantly observed as an accompaniment to acne in young persons, is surely an indication of something wrong which should be attended to by the physician called on to relieve the eruption on the face. The neglect of the many coordinate symptoms seen in patients with acne is responsible for much of the supposed rebelliousness of the disease.

The relations of the eruption of acne to the menstrual

2. Trans. Med. Soc. of the State of New York, 1882.

3. Bulkley (L. D.): Syphilis in the Innocent. New York, 1894.

4. Bulkley (L. D.): Neurotic eczema, Med. News, Jan. 31 and Feb. 7, 1891.

functions[5] should certainly direct attention away from the purely local consideration of the eruption—for almost every woman affected will tell you that she realizes fully some connection between the two. Many years ago the late Dr. Peaslee of New York, in discussing my paper on acne, declared that whenever he found an excessive amount of acne on the chin he looked for and found some disorder of the sexual apparatus, an observation which I have verified time and again. All know that acne in older persons invariably indicates internal disorder, often due to gross errors in eating and drinking, and a proper appreciation of these will often lead the patient to a reform which ultimately proves of the greatest possible advantage in many ways.

We see, therefore, that acne, instead of being only a local disfigurement, may often, by its danger signal, be of great benefit to the patient if only the physician appreciates it and acts intelligently and energetically thereon.

PSORIASIS.

This disease is sometimes erroneously called the eruption of health, because so many patients with it, to a superficial observer, appear to be healthy. But sufficiently minute and prolonged study of many cases, over periods of time, perhaps covering many relapses, will certainly show that this is not the case, and continually the appearance of the eruption will be a danger signal which it is well to heed and act on.

Time and again it will be noticed that the recurrence of the eruption has followed some great nervous strain or exhaustion. It frequently returns with the prostration attendant on nursing an infant, and, while the eruption may disappear at the onset of a febrile disease, it is seen to recur after debilitating illness. The urinary warning of psoriasis is also significant. Only recently a long-standing psoriasis led me to discover a great urinary insufficiency in a lady who otherwise appeared in perfect health. Although weighing 163 pounds she sometimes passed only from seven to eleven ounces of urine in the twenty-four hours. I later learned that she had undergone a serious operation on the urinary tract. In another recent case, a young lady, weighing 138½ pounds, who had had psoriasis eight years, at times passed enormous amounts of urine, with great frequency and urgency, day and night. At other times the amount would be scanty and of high specific gravity (1.041, no sugar) and it would have an acidity of almost four times the normal degree, with 4.3 per cent. of urea or over double the normal amount. Surely the perturbations of metabolism manifested in these patients must have serious relations to the general economy, and these illustrations could be multiplied many times from my experience.

CHRONIC URTICARIA.

While acute attacks of urticaria may often indicate ptomain poisoning which call for prompt attention, in its chronic form it frequently shows the presence of faulty metabolism and intestinal indigestion and fermentation, which, if unchecked, will certainly have other prejudicial effects on the system. The experience of every one shows that when these errors of intestinal action persist for any length of time they are liable to result in some other trouble, and the chronic urticaria may be the single warning sign which leads the patient to seek medical relief.

5. Bulkley (L. D.): The Influence of the Menstrual Function on Certain Diseases of the Skin, Rebman & Co., New York, 1906.

ERYTHEMA MULTIFORME AND BULLOUS ERUPTIONS.

Like urticaria, these are often but the outer warning of more or less serious metabolic changes of a faulty nature that are taking place in the system, with autointoxication. Occasionally they are observed with a hard, bounding pulse, indicating high arterial tension which calls for relief by dietary and medicinal measures in order to prevent further damage to some organ.

PRURITUS.

Severe, general or localized pruritus, like neuralgia in many instances, may be a nerve-cry or danger signal telling of a lowered nerve vitality, which, if not improved by appropriate measures, may be followed by more serious results.

XANTHOMA DIABETICORUM.

This rather rare eruption has repeatedly called serious attention to a diabetes, which perhaps had long existed, but which the patient had neglected until the skin gave the danger signal which induced him to consult a physician. Successful treatment of the eruption can only be accomplished by the proper care of the systemic condition.

BOILS AND CARBUNCLES.

These are too often regarded and treated simply as local affairs, often to the great detriment of the patient. While it is true that the presence of pus (especially in external regions) indicates the action of pus cocci, we now know, from the almost omnipresent existence of these organisms, that there must be some other cause determining their activity in particular localities. We know that micro-organisms can not be cultivated on unsuitable media. Thus the recurrence of boils and carbuncles is continually found to indicate the existence of a lowered vitality of system, sometimes of glycosuria. The danger signal should be attended to, and all of these conditions appropriately treated, if the best interests of the patient are to be served and other and later trouble avoided.

DERMATITIS MALIGNA.

Paget's disease of the breast should always excite serious attention, because of its liability, or indeed probability, of being associated with cancer of the mammary gland. In a large share of cases it is useless, if not wrong, to neglect the danger signal on the skin and by attempts, too often futile, to heal it by local treatment, allow the time to pass when a radical removal of the entire breast and glands would offer the best prospect of a cure of the cancerous condition.

ACANTHOSIS NIGRICANS, WITH MULTIPLE CAPILLARY ANGIOMATA.

The attention of the profession has again been called by Dr. Willy Meyer[6] to the importance of this condition, when existing on the abdomen, as a sign of cancer of some abdominal organ. This is but another instance of the skin exhibiting a danger signal.

LUPUS VULGARIS.

While in the majority of instances lupus remains a local manifestation of tuberculosis of the skin, it is not at all uncommon for it to be associated with tubercular infection of other organs, especially the lungs, which danger signal should never be neglected in severe or protracted cases. The limits of this paper prevent the full consideration which might be given to these and many

6. Trans. Amer. Surg. Assn., 1896.

more manifestations on the skin which have constitutional relations, and which can well be regarded as exhibiting danger signals. I may only briefly mention a few more which have occurred to me; doubtless many more illustrations could be secured with more careful attention. In many of these now mentioned the connection is, of course, well known and commonly recognized.

OTHER SKIN LESIONS AS DANGER SIGNALS.

Purpura rheumatica and erythema nodosum are constantly recognized as dependent on a rheumatic condition, and proper, active anti-rheumatic treatment indicated by this warning may save the patient from more serious trouble.

Petechial and erythematous rashes are not infrequent accompaniments of malignant endocarditis and may occur in connection with septicemia and pyemia. Purpuric lesions are well known to be an important symptom in epidemic cerebrospinal meningitis. Rose spots, especially on the abdomen, have long been recognized as a special sign of value in typhoid fever. Pigmentary alterations in the skin form one of the important diagnostic marks in Addison's, Graves' and Hodgkin's diseases, while myxedema is largely recognized by its manifestations in the skin and subcutaneous tissue.

Sweating and flushing of the skin are frequent accompaniments of the menopause, and may often direct the patient to seek medical relief which may avert other trouble. Dermatitis medicamentosa represents eruptions of varied character which occur on the skin wholly from the internal administration of certain drugs to those who have some peculiar idiosyncrasy. In these cases, if the danger signal is heeded and the drug withdrawn the eruption commonly ceases without further harm.

In this brief and rather hurried sketch of some of what I have designated "danger signals from the skin," I have attempted to show that the skin is not to be regarded as merely an outer covering of the body, but that it is a most important organ, having vital relations with many parts of the economy. It frequently exhibits conditions on its surface which it is well to study patiently, interpret accurately, and heed carefully in order to effect a cure of its diseased condition and also to advance the best interests of the patient.

He, therefore, but poorly serves his patient who hastily regards only the skin lesions (or too often only part of them) and gives some local application without realizing the significance and true cause of what is often a signal flag of danger which Nature offers for his aid.

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TRANSBRACHIAL ANASTOMOSIS.

A NEW METHOD OF SURGICAL TREATMENT FOR BRACHIAL PALSY.*

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The following is a preliminary report of a new method of restoring function to paralyzed nerves, by anastomosis with analogous nerve trunks on the opposite side of the body. The patient herewith presented had an anastomosis between the healthy left brachial plexus and an almost completely paralyzed right brachial plexus, fifteen months after an attack of anterior poliomyelitis. In this case the operation has been followed by no demonstrable injury to the left brachial plexus, but by a rapid and very decided gain of power in the right hand, forearm and shoulder.

The operative treatment of brachial palsy in the past has dealt chiefly with those forms of paralysis in which the lesion involves directly the nerve fibers of the brachial plexus. Thus in brachial birth palsy, and in those forms occurring later in life from traumatism of the plexus, encouraging results have been obtained by excluding, by means of a resection or anastomosis, the damaged and non-conducting areas of the nerve trunks. In these cases the lesion is directly accessible to the knife. The problem is a different one, however, when the brachial plexus is thrown largely out of function from infantile palsy. Here the lesion, situated in the anterior cornu of the cervical segment of the cord, is, for the present at least, beyond surgical access and the possibilities of surgical relief are restricted to anastomoses between functional and paralyzed muscle systems or nerve trunks.

The peculiarities of the individual case, especially the variability of the residual paralysis, prevents uniformity in the surgical treatment. Each patient must be studied as a separate and special surgical problem.

Patient.—The patient was born in November, 1901, and was a perfectly healthy boy until May, 1905, when he had the measles.

History.—In July, 1905, when he was about three and one-half years old, he awoke one morning with a loss of power and tenderness of the right arm. He was feverish, at times delirious, had epistaxis, and two days later it was noticed that there was also diminished power in the legs, although the right arm was chiefly involved. For four weeks the tenderness persisted in the arm and frequently seemed to cause the patient to awake screaming during the night. After five weeks the paralysis of the legs gradually disappeared, but progressive wasting of the right arm and shoulder was noticed. Two or three months after the onset of the palsy he entered a hospital and was treated two weeks by massage. Later, he was under osteopathic treatment for five months, but without decided benefit. On Oct. 26, 1906, fifteen months after the development of the paralysis, he entered the Samaritan Hospital. At this time there was no wasting or palsy of the legs or left arm, but the right arm and shoulder were wasted and useless. The deltoid, trapezius, rhomboid, scapular and pectoral muscles were atrophied and functionless, and as a result there was marked dropping of the right shoulder. The muscles and bones of the arms were wasted, the hand was never used, but was carried from place to place by the opposite hand. There was a slight development of some of the extensors and pronators of the forearm, and only slight power of extension of the wrist and pronation of the hand. Sensation was uninvolved. In considering the problem offered in this case, as a surgical one, we could conceive of five possible procedures as follows:

1. Muscular or tendinous transference and anastomosis: The very feeble power limited to certain extensors and pronators of the forearm caused this method of treatment at once to be rejected.

2. An anastomosis between nerves of the brachial plexus containing functionating fibers and adjacent non-functionating cords: Here again the extent of the palsy and the difficulty in isolating active fibers made the method seem of little promise.

3. An anastomosis between branches of the brachial plexus and adjacent cervical or dorsal nerves carrying motor fibers: The small size of the cervical and dorsal motor nerves, and especially the fact that they were to some degree implicated in the palsy, caused this method to be rejected as inadvisable.

4. An anastomosis between the brachial plexus and one or more of the motor cranial nerves: Of the cranial nerves, only two seemed to be available—the spinal accessory and the hypoglossal. The shoulder drop and the paralysis of the trapezius indicated an implication of the former and the hypoglossal,

* Read before the Philadelphia County Medical Society, Feb. 15, 1907.

therefore, was chiefly considered; it was not until the patient was on the operating table that the thought of its use was finally abandoned. The relatively small size of the nerve, its distance from the brachial plexus, rendering it necessary to adopt some method of bridging if it were used, and the technical difficulties involved in isolating any considerable length of the nerve, were objections to the use of the hypoglossal.

5. Finally, the possibility of securing an anastomotic segment from the opposite brachial plexus was considered: The chief objections to a transbrachial anastomosis seemed to be the difficulty of securing sufficient lengths of nerve to form a bridge across the neck and the danger of damaging the healthy plexus. We had had some previous experience in splitting nerve trunks and using the split portion for anastomosis (in one case carrying half of the sciatic nerve through the thigh and anastomosing it to branches of the anterior crural nerve), and in this present case it was determined, by splitting segments from each brachial plexus, to attempt to secure sufficient lengths of nerve fibers for anastomosis in the median line of the neck.

Operation.—Oct. 27, 1906. The patient being under ether the right brachial plexus was exposed from a point just above the clavicle to the region where the nerve trunks emerge from between the scalenus anticus and the medius muscles. The sixth cervical nerve seemed especially wasted and atrophic. It was divided in half close to its point of emergence and by delicate dissection half of the nerve trunk was isolated from above downward. This separation was carried into the adjacent anastomosing nerve trunks. In this way two nerve cords of fair size were separated down to a point slightly above the clavicle. The left brachial plexus was then exposed, the prolongation of the sixth cervical divided nearly in half close to the clavicle, and a bundle of nerve fibers about two inches in length isolated by splitting the nerve trunk from below upward. A small transverse incision was then made above the suprasternal notch, and canals were bluntly tunnelled through between the anterior muscles of the neck and trachea, connecting the lateral with the median incisions, then the free ends of the separated nerve bundles were gently brought through into the median incision and united in an end-to-end manner by very fine chromicized catgut. Thus a bridge of nerve fibers was formed between the two brachial plexuses, having a central attachment on the left and peripheral attachments on the right side. The union was reinforced by forming a partial fascial sheath about the point of nerve union, and all three wounds carefully closed in layers without drains. Following the operation, the child developed some tenderness and pain along the chief nerve trunks of the right arm, which gradually subsided. The left arm was studied with considerable apprehension, but no disability or nerve disturbance was at any time discovered.

Postoperative History.—At the end of a week there was a slight suggestion of new power of the hand. The child was discharged from the hospital on the eleventh day, and since then has been without electricity or skilled massage. It is now (February) three and one-half months since the operation, and the child already shows an improvement far beyond expectations. The nutrition of the arm is good, the forearm has increased one-half inch in circumference and the upper arm one-quarter inch. The power of extension which was limited to the wrist, is now possessed by all the fingers. The child can partially flex the wrist and all the fingers and thumb; and abduction and adduction of all the digits has been gained. Pronation of the hand remains and there is some power of supination. The shoulder-drop has disappeared and the shoulder can be elevated, carried forward or backward at will. There is excellent power of rotation at the shoulder joint, especially inward rotation. A marked development of the scapular muscles, the trapezius and the pectorals has occurred. The paralysis and atrophy of the deltoid and upper arm muscles persist. The child is able to support the body against the extended arm and uses the hand constantly in grasping objects and in aiding the opposite hand.

Theoretically, we can conceive three methods in which the operation in this case may have restored function.

First.—The splitting of nerve trunks reduces the pressure on individual nerve fibers, permitting the escape of any abnormal exudate from within the nerve sheath. Thus in certain cases of neuritis relief from pain has been obtained and some immediate restoration of function by splitting the sheaths of the involved nerves, and in separating the nerve fibers. As the primary lesions in the present case seems clearly to have been a lesion in the cord, a relief of tension of the nerves is not a reasonable explanation of the restoration of function.

Second.—In the splitting of nerve trunks, no matter how accurately it be done, it is probable that many nerve fibers are divided. If the nerve contain functional as well as degenerated fibers there is a possibility of a readjustment of function through new anastomoses of liberated and divided nerve ends. Within certain limits it is conceivable that the more extensively the nerve fibers are divided from each other, the greater the opportunities for new and perhaps better anastomoses. This we consider to be an explanation of a part of the widespread improvement which has occurred in the present case, but it is difficult to conceive that, in a plexus so extensively paralyzed, this alone would be sufficient to give so marked restoration in power, without invoking other factors.

Third.—The formation of new nerve paths from the left into the paralyzed right brachial plexus, which have been given a wider field of action by the freeing of innumerable fibers in complex nerve trunks by the extensive splitting of nerve bundles, has probably been the chief factor in the restoration of power in the present case. This preliminary report, therefore, is offered as proving the technical possibility of transbrachial anastomosis and as suggesting the desirability of a more extended trial of the method in certain cases of brachial palsy not amenable to treatment by milder measures.

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THE STANDARDIZATION OF CARDIAC REMEDIES.*

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Within the past two or three years there has been a great revival of interest in problems connected with the use of drugs in the treatment of disease, and several factors are responsible for this change of attitude. The appearance of the new Pharmacopeia, causing as it did many discussions in regard to the admission of new remedies and the changing of the standards of some of the older preparations, could not fail to awaken a more or less widespread interest. Another important influence has been the warfare begun by the *Ladies' Home Journal* and *Collier's Weekly* against the sale and use of all forms of nostrums and quack remedies. The crusade has been taken up by several other lay papers and by a very few medical publications, most prominent among the latter being THE JOURNAL of the American Medical Association. This Association has also played an important part in other ways, viz., through the work of its Council on Pharmacy and Chemistry it has exposed the false claims of many of the much-vaunted remedies and by its articles on "The Physician and the Pharmacopeia" it has aided the practitioner in becoming better acquainted with the possibilities to be found among the "official" remedies.

*From the Pharmacological Laboratory of the University of Michigan.

One of the first essentials, however, to a practice, satisfactory to both patient and physician, is that the remedy used shall not only possess the qualities usually ascribed to it, but also that different preparations of the same drug shall possess these qualities to a uniform degree, or in other words, shall be of uniform strength. One of the great advances made in the new Pharmacopeia over its predecessors is that it requires, in many more instances than formerly, that the drug shall be standardized so as to contain a certain fixed percentage of its active principle, thus insuring to the practicing physician as uniform preparations as it is possible to procure.

This examination by chemical means is carried out on a large number of drugs, among which may be mentioned as familiar examples nux vomica, opium and belladonna; yet there still remain many important medicines for which no standard has been fixed. This is due to the fact that in many of these cases the active principle is either unknown or can not be isolated with sufficient accuracy by any chemical method which we have at our command to-day.

Among these latter drugs none is of more importance than the large group of cardiac remedies better known, perhaps, as the "digitalis series." Others may be mentioned, as ergot and cannabis indica, but with no drug is it so essential to have a uniform action as with the series first named, on account of their wide use in medicine and the impossibility of getting other remedies to take their place.

Still to-day it is impossible to fix any chemical standard to which preparations of digitalis and its allies shall conform, on account of the difficulty connected with the isolation of the glucosides.

What makes the question a more important one from the practical standpoint is the fact that the crude drug itself varies notoriously in its content of active principle. This variation depends on the time when the leaves are gathered, and the country from which the plant is obtained, influencing as it would the climatic and soil conditions under which the plant could grow. Of greatest importance is the manner in which the drug is prepared for the market and the way it is preserved before it is used.

The U. S. Pharmacopeia directs that the leaves of the second year's growth shall be gathered at the commencement of flowering. Experience has shown that these are best dried in a current of warm air and then should be preserved in tin containers to protect the drug from light, air and moisture. If it is preserved in this way the leaves will probably retain their strength for a long time.

The influence of the locality in which the plant is grown is more a matter of opinion than of scientific investigation, which latter would be greatly complicated by the other factors mentioned above. Duffield,[1] in 1868, examined the amount of digitalin contained in specimens of the drug obtained from England, Germany and this country, and found that the percentage was in favor of the American product, which slightly exceeded the amount found in the English leaves, and the English, in turn, contained more than the German. Nevertheless, there is a widespread opinion that the best leaves are obtained from England, and that these, as well as those from Germany, are superior to the American. Moreover, it must be noted that digitalin is not the most important active principle of digitalis. From these facts it will be seen what great opportunities there are for variations in the strength of the crude drug, and, therefore, in the pharmaceutical preparations as they appear on the market, even when these are made according to pharmacopeial directions.

The necessity for some way of standardizing these preparations has been recognized by physicians and pharmacists alike, and it has led to the introduction of physiologic methods of assay which are now being used by several of the larger pharmaceutical houses which, may it be said greatly to their credit, are largely responsible for the perfection of these methods.

Nevertheless, the employment of these methods is far from being universal, and the demand for them is becoming greater and greater, as is shown by the frequent editorials which have appeared during the past few years in medical journals in this country and in Europe.

Dixon[2] says that he and Haynes demonstrated in Cambridge the variability of action of the group of cardiac tonics, and makes the statement that he believes hundreds of patients die annually from digitalis and its allies not possessing the virtues required of them.

Houghton[3] tested a number of tinctures prepared from preparations of strophanthus found on the market and found some of them were three times as strong as others.

The recent work of Reid Hunt and of Sollmann[4] on adrenalin showed also the great variations which may occur in such a remedy, even when it is "standardized," or is "1-1,000."

On account of the practical importance of the subject I have examined the strength of a number of tinctures of digitalis and of strophanthus which I have obtained on the market in different parts of the country, with the idea of ascertaining the relative strength of different preparations which are sold under the same name.

There are two methods of physiologic assay in use for the cardiac drugs. The first[5] consists in ascertaining the minimum fatal dose for frogs per gram of body weight. Frogs not varying more than 3 grams in weight are injected with varying doses of the preparation to be tested, and are then examined at the end of twelve hours and the number of dead and living noted. The dose is then further narrowed down and a new series injected; this procedure is repeated until the minimum lethal dose is ascertained.

The second method, and the one I prefer, is to ascertain the dose necessary to produce the digitalis standstill of the frog's heart. The picture of a digitalis-poisoned frog's heart is so typical and easy of recognition that it can not be mistaken. It is important that the frogs to be used should be of the same species, as some are more susceptible than others (*Rana temporaria* reacts to a smaller dose and more positively than *R. esculenta*. *Künkel*). In my assays I employed *R. virescens*, which were kept in a tank with running water so as to have them in as uniform condition as possible. When they were needed three or four frogs of about the same size were weighed and placed under separate jars.

The tinctures to be tested were all subjected to exactly the same manipulation and all the measurements for dilution and dosage made with the care used in chemical quantitative work. One or two cubic centimeters of the tincture were evaporated over a water bath to

1. Am. Jour. Phar., 41, 55.

2. Brit. Med. Jour., Nov. 24, 1906, p. 1459.
3. JOURNAL A. M. A., 1898, xxxi, p. 959.
4. JOURNAL A. M. A., Sept. 8, 1906, xlvii, p. 790.
5. Houghton: National Dispensatory, p. 1732.

about one-half the original volume to get rid of the alcohol, and to the remainder physiologic salt solution was added in sufficient quantity to make it measure about five times (in the case of tincture of digitalis) the original amount taken, so as to permit of accurate measurement of the smaller doses. The evaporated tincture of strophanthus had to be diluted from two to five hundred times.

A series of three or four frogs was injected with graduated doses of diluted tincture, a record being made of the time when each injection was given. Exactly one hour from the time when the animal was injected its heart was examined. If on examination the heart was found beating, the dose administered was too small. The heart with the correct "end reaction" will usually be seen to give a feeble beat if the animal is opened just before the end of the time limit, or it may be that only the auricles will show movement. In one in which the dose is slightly too large no beat will be seen unless the heart is stimulated by mechanical means, when a slight movement may be brought out. With still larger doses no contraction can be obtained in any way. The outer limits of dosage being found on the first series of frogs, a second series was injected with the dose still further narrowed down until the exact amount is ascertained which will produce the typical digitalis standstill of the heart in one hour. In estimating the doses to be given, due allowance has to be made for differences in the size of the frogs, the ratio being determined on the basis of a 20 gm. animal, the correct amount to be given to an individual frog being found by a simple proportion. If the dose is determined in this manner, the size of the frog seems to have little influence, as I have noticed many times that if a 60 gm. frog is given three times the dose given a 20 gm. animal the cardiac effects will be about the same.

In a series of frogs the uniform gradation of effect which can be produced is very striking as a rule, but it occasionally happens that an exceptional animal is met which is either more susceptible, and so is poisoned by a smaller dose, or is more tolerant, and therefore requires a larger amount than the others in its series. Such irregular reactions complicate the assay somewhat, as they necessitate a larger number being injected to avoid error.

No.	Toxic Dose.	Maker.	Origin of Plant.
1	.08 c.c.	Wholesale manufacturer.	From German leaves.
2	.11 c.c.	Laboratory.....	From English leaves.
3	.12 c.c.	Laboratory.....	From leaves obtained f'm manufacturer of tincture No. 5.
4	.13 c.c.	Retail druggist	
5	.15 c.c.	Wholesale manufacturer.	Physiologically assayed.
6	.16 c.c.	Wholesale manufacturer.	From physiologically assayed leaves.
7	.175 c.c.	Wholesale manufacturer.	Physiologically assayed.
8	.18 c.c.	Retail druggist.....	
9	.18 c.c.	Retail druggist.....	From German leaves.
10	.19 c.c.	Wholesale manufacturer.	
11	.20 c.c.	Retail druggist.....	From English leaves.
12	.21 c.c.	Retail druggist.....	
13	.26 c.c.	Wholesale manufacturer.	"German tincture."
14	.27 c.c.	Wholesale manufacturer.	
15	.28 c.c.	Wholesale manufacturer.	
16	.29 c.c.	Retail druggist.....	From English leaves.

I have assayed fourteen preparations of the tincture of digitalis obtained from retail druggists located as follows: New York City, 3; Rochester, N. Y., 2; Detroit, 3; Richmond, Ind., 3; Kalamazoo, Mich., 1; Ann Arbor, 2; and two tinctures made in the Pharmacological Laboratory at Ann Arbor. Six of the tinctures were made from the leaves by the retail druggists themselves according to the U. S. Pharmacopeia, while the remaining eight were made by the druggist either from fluid extracts obtained from wholesale manufacturers, or the tincture itself was bought from these firms. It will be entirely unnecessary to give the details of each assay, but merely to give the toxic dose which was obtained in the manner described above and being the amount necessary to bring the heart of a 20 gm. frog to systolic standstill in one hour.

The results given above show that some of the tinctures are almost four times as strong as others, or in other words, that four or five drops of one will produce the same effect as fifteen of another preparation. Which tincture the patient gets in his prescription is a question of luck; for instance, tincture No. 1 was obtained from the same pharmacy as tincture No. 16. Further comment would seem unnecessary.

Tinctures Nos. 1, 10, 14 and 15 were all made by the same wholesale manufacturer. This firm makes no physiologic assay of their cardiac tonics, although I understand that they expect, within the next year or two, to install such a department.

The maker of tincture No. 16 had been "complimented many times on the uniformity of his tincture." He was much surprised at the results of the assay, which he finally decided were probably due to the fact that: "It was possible that diluting his 1890 U. S. P. 15 per cent. tincture to make it 10 per cent. to conform to the 1905 U. S. P. he might have forgotten that he had already done so and had diluted it twice."

So far as the strength of the different tinctures is concerned, honors seem to be about evenly divided between the wholesale manufacturer and the retail pharmacist, the variations being dependent on the source of the crude drug.

Tincture No. 3 was made by one of the students in the laboratory course according to the U. S. P., Eighth Revision, using leaves obtained from the manufacturer of tincture No. 5, while tincture No. 2 was also made in the laboratory from "select English leaves."

As illustrating still further the variations in strength which come from year to year, I might add that for the past three years the medical students have been making tinctures of digitalis in the Pharmacological Laboratory of the university and have then assayed them. The average toxic dose based on a 10 per cent. tincture has been as follows: For year 1904-5, 0.20 c.c.; for year 1905-6, 0.18 c.c.; for year 1906-7, 0.12 c.c.

INFUSION OF DIGITALIS.

In connection with the use of digitalis, it is common to find the infusion used instead of the tincture, and it may be questioned whether the infusion is not more largely used than the alcoholic preparation, even in spite of the fact that the latter will retain its strength much better. Nevertheless, it is true that many clinicians believe that they get better results from the watery extract, and especially is it claimed that the latter is a better diuretic. Yet the important glucosides are present in both preparations and the difference may be a question of dosage. The infusion of digitalis is 1.5 per cent., while the tincture is 10 per cent., or approximately six and one-half times as strong. I assayed an infusion made from the same leaves as the laboratory tincture (No. 3), and in view of the difference in strength the toxic dose should be 0.12 c.c. times 6.5 or 0.78 c.c. I found 0.75 c.c. to be the toxic dose, the heart which had received 0.7 c.c. giving a few spontaneous beats after it was exposed. The effect on the heart, then, is in proportion to the strength of the two preparations. The dose of the tincture used is commonly 1

c.c., and of the infusion about 30 c.c., or a ratio of 1:30, whereas the ratio of the strengths of the two preparations is 1:6.5, or in other words, when the infusion is given a dose of at least four times as large is administered as when the tincture is prescribed, and it is not strange that more marked effects are obtained from it. Sir Lauder Brunton has pointed out that with the use of digitalis in a heart case the first sign of the beneficial effect of the drug is diuresis, which should appear in from thirty-six to forty-eight hours after the drug has been administered, and if it does not appear the dose of digitalis is too small and should be increased.

STROPHANTHUS.

I also assayed five preparations of the tincture of strophanthus by the same method as given above with the following results: 1, Toxic dose, .0012 c.c.; 2, toxic dose, .0015 c.c.; 3, toxic dose, .004 c.c.; 4, toxic dose, .005 c.c.; 5, toxic dose, .005 c.c.

The dose is that sufficient to produce systolic standstill in the heart of a 20 gm. frog in one hour. All these tinctures were purchased in the open market, but they were made by wholesale manufacturers, all of whom advertise that their cardiac drugs are physiologically assayed. Tinctures Nos. 1 and 4 were made by the same firm, and yet one is four times as strong as the other. On looking further into this case I found that No. 4 was prepared according to the 1890 U. S. P., and therefore was a 5 per cent. tincture instead of 10 per cent., as in the 1905 edition, so that, allowing for this change (for the sake of comparison) the toxic dose should be 0.0025 instead of 0.005. Making the correction still leaves the first tincture twice as strong as the other, and yet they are put out by a firm whose drugs are "physiologically standardized."

The matter still stands, however, that the patient with a prescription for tincture of strophanthus, if he goes to druggist A, gets a preparation twice as strong as if he went to druggist B across the street, or four times as strong as if he went to druggist C around the corner. It is not strange that physicians meet with some results in practice which they find it hard to explain.

A further comment might be made of the fact that one of the tinctures was an 1890 U. S. P. preparation. This was purchased about March 1, 1907, and when the matter was called to the druggist's attention he remarked that "the physicians in the town were very slow about taking up the new Pharmacopeia and that none of them is using it yet." One of the clerks said that no one got a 1905 preparation unless it was specially called for. And yet this was six months after the new edition was official, and the new standard should have been used unless the 1890 strength was specified.

A striking fact is the great difference in toxicity between digitalis and strophanthus, the latter being almost sixty times as strong as the former. These results are in marked contrast to those of Haynes,[6] who says that a comparison of the two tinctures named shows strophanthus to be nine or ten times as toxic as digitalis. But it must be borne in mind that he worked with the tinctures made according to the British Pharmacopeia, where the strength of the tincture of digitalis is 12.5 per cent. and that of strophanthus 2.5 per cent. Making an allowance for these differences, we find that his figure would have to be multiplied five times to make a fair comparison. In other words, his work shows strophanthus to be about fifty times as toxic as digitalis. In my series the average toxic dose of all the tinctures of digitalis was 0.19 c.c.; of all the tinctures of strophanthus 0.0033 c.c., a ratio of 1 to 57. This ratio is only proved for the action on the frog's cardiac muscle, and it would be going too far to say that the same relation exists in man. Haynes considers that such a ratio found in the lower animals may be carried over to man; that if one tincture acts ten times as strongly as another on the frog, the same relation may be expected to hold in the higher animals. However, I am inclined to think that it would be hard to convince the clinician that while the average dose of tincture of strophanthus is 8 or 10 minims, he could be justified in giving a dose of digitalis fifty times as large, or one ounce of the tincture. Nevertheless, it is certainly true that there is a lot of evidence to show that strophanthus acts more strongly on the mammalian heart than digitalis, and this fact may explain why in certain cases of heart disease in which digitalis seems to do little good, strophanthus will often produce good results. It is equally true that digitalis will often succeed where strophanthus fails.

What has been said in regard to carrying over the ratio found in the frog to the higher animals, of course, only applies to the relative toxicity of different drugs. It is manifestly perfectly legitimate to transfer the ratio found for different preparations of the same drug, and that is where the value of the physiologic assay comes in.

CONCLUSIONS.

No one can deny the necessity of a uniform strength of the cardiac tonics on the market, but how this is to be obtained is another matter. The fact that a preparation is marked "physiologically standardized" may not mean much and "physiologically assayed" may mean less. If the tinctures are standardized those of an individual firm may be uniform, although as I have shown, that does not necessarily follow, but each firm having its own standard there can be little more uniformity than at present.

What is needed is a national standard, such as the Pharmacopeia furnishes for chemical assays. Perhaps the revisers of the next Pharmacopeia may see their way clear to insert some such method, but for the present we are left helpless so far as they are concerned. It has been very aptly suggested that the U. S. Public Health and Marine-Hospital Service might furnish a standard method of assay that would be acceptable to pharmacist and physician alike.

It has been pointed out that the adoption of such a standard would work a hardship on the retail druggists, a very large number of whom make their own tinctures, and who could not possibly carry out such tests. This objection seems to be without any great weight. At present the retail druggist can make as good a tincture as the large manufacturing house, as my results show, and clearly there is no good reason why he should not do so. But when he can buy a better preparation than he can make and a preparation that the profession prefers, few pharmacists would not avail themselves of such a standard remedy.

As the matter now stands, the physiologic assay is made by the physician at the bedside. He gives the drug for a reasonable time and gets no effect perhaps, and then has to increase the dose until the desired results are attained. No amount of standarization would ever do away with his ascertaining the physiologic dose for the individual patient, but it certainly would shorten the process and avoid the loss of much valuable time, which may mean the life or death of the patient.

6. Bio-Chemical Journal, 1906, I, 64.

ENDEMIC TYPHOID FEVER FROM INFECTED MILK.

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Last October eleven patients with typhoid fever were admittted into the Medico-Chirurgical Hospital in less than one week. All of these patients came from an apartment house in two adjoining blocks on North Eighteenth street, Philadelphia. Seven of the eleven patients came from one apartment house from which some twenty-odd patients were taken down with the same disease in two weeks' time. The Board of Health officials made a thorough investigation regarding the sanitary conditions of the house and pronounced it perfect. Inquiries concerning the drinking water used by these patients were made and it was found that they all either used filtered or boiled water. The food and milk supply was next considered. A culture made from the milk proved the presence of the typhoid bacillus in it. Dr. Eugene Swayne, resident physician at the hospital, being interested as to the probable source of contamination of the milk, thoroughly canvassed the neighborhood threatened with an epidemic of typhoid fever. He soon learned that the same milkman supplied all of the apartment and boarding houses from which many typhoid patients were removed to a number of the different hospitals in this city. Dr. Swayne next visited the milkman's dairy, and there learned that the proprietor and one of his servants were both sick with the disease. The son was convalescing from typhoid fever and was filling the milk bottles from a tank by siphonage, starting the flow by sucking with the mouth at one end of the tube. A culture made from this end of the tube revealed many typhoid bacilli. I do not know of any other instance where infection of the typhoid bacillus was transmitted through the saliva. Of course, it undoubtedly has occurred quite frequently, but has never been reported or traced so in detail.

The initial manifestations in these patients were so vague that they did not suspect of being attacked by a serious illness. For a week or ten days they had a feeling of weariness, with some aching in the limbs, abdominal tenderness in the right iliac fossa on pressure, and a tendency to constipation. During this period they slept badly, experienced chilly sensations, the appetite was poor and at the end of a week's time were forced to remain in bed out of sheer exhaustion. The temperature now began to rise above normal and ascended in the highly characteristic manner. Each evening it was a little higher than the preceding day at the same time, until the end of the second week, when it had reached its fastigium, which was not over 103 F. in most of the cases. However, in two patients it reached 105 F. on one occasion, due probably to the indiscretion of the friends that called to see them in the afternoon. During the entire illness of these patients the temperature readily responded to the cold sponges when it reached 102.4 F. or above. Delirium of a low muttering type occurred in one patient and lasted only for three days. It may be mentioned in this connection that this same patient also had epistaxis and diarrhea.

Tympanites was present in one patient, to some extent; he also had one intestinal hemorrhage, but made a speedy recovery.

The complications present in these cases were otitis and phlebitis in one, and phlebitis in another. In both patients the phlebitis manifested itself in the common femoral vein of the left leg. The interesting features of these cases were the slightly enlarged spleen, a few rose spots and a positive Widal reaction in all of the patients before the eighth day of the disease, no other abnormal physical signs being present. The treatment of these patients was much alike. A few changes were necessary in those who had slight complications. Under the prophylactic treatment great care was exercised properly to disinfect the excreta with a 5 per cent. solution of phenol. The linen was soaked for a half-hour in a 1 to 2000 solution of mercuric chlorid before sending it to the laundry. The individual eating utensils were boiled immediately after using, and the nurse and other attendants instructed to disinfect thoroughly their hands after coming in contact with the patients. The ordinary hygienic measures were carried out in each case. A mouth-wash, consisting of eight drops of beechwood creosote in three ounces of eucalyptus water, was employed after each feeding The rooms were well ventilated, avoiding unnecessary draughts of cold air, with an even temperature not exceeding 65 F. During the active stage of the disease the diet consisted of liquid foods, such as would be entirely absorbed, leaving little or no residue. Six ounces of predigested milk every two hours was the main article of diet, alternated occasionally with so much lemon albumin, orangeade or whey. Water was given *ad libitum*. After the temperature had been normal for a week they were allowed soft food sparingly at first, and in another week's time were gradually allowed regular house diet. Medicinally they were all given as an intestinal antiseptic and antipyretic two grains, each, of quinin sulphate and phenyl salicylate (salol). In some of the severer cases they were given a half-ounce of whisky every four hours, with one-fortieth of a grain of strychnin sulphate, so that the patient received ample stimulation. The patient who had intestinal hemorrhage received fifteen minims of terebene every hour for six doses, then every three hours for three days. There were no further signs of hemorrhage and the terebene was discontinued.

The eleven patients all recovered without relapse or recrudescence.

The manner in which these patients were infected proves again that the excretions and secretions of convalescing typhoid patients are loaded with typhoid bacilli and often are the source of epidemics, more so than during the active stage of the disease, because precautions are taken no longer after the patient is up and around.

Peritoneal Absorption of Oxygen.—H. Gutierrez has been much pleased with the results of flushing the abdominal cavity with oxygen after abdominal and gynecologic operations. He describes a typical case in the *Cronica Med. Mexicana*, x, 1; bilateral pyosalpinx had caused disturbances for eight months, with pelviperitonitis and cachexia. Ablation of the tumors was very difficult owing to extensive adhesions and one pus pocket ruptured. The Mikulicz tampon could not be used under the circumstances. Gauze drainage was supplemented by introducing through a drain tube from 40 to 60 liters of oxygen with free outlet. The temperature rose only one degree Centigrade the day after the operation and then returned permanently to normal, and the wound healed with remarkable rapidity and completeness, while the general condition improved to correspond. The oxygen treatment was continued daily for two weeks before the tube was removed.

THE ESTIMATION OF HEMOGLOBIN-CONTENT OF BLOOD WITH MODERN INSTRUMENTS.

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The methods for hemoglobin estimation are as numerous as the principles on which the different instruments are based are varied, and, theoretically, little can be done to improve on them. Yet, after one has tested by

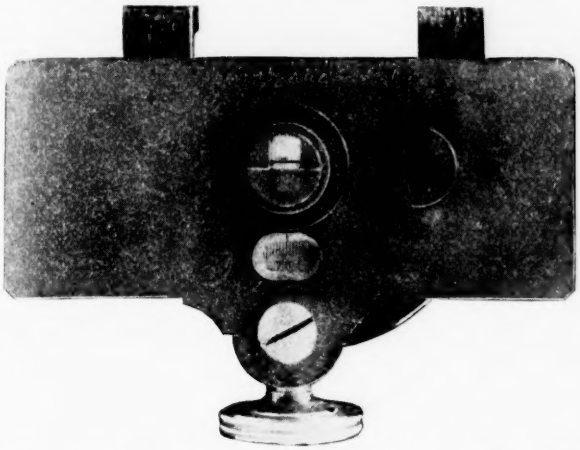

Fig. 1.—von Fleischl-Miescher's instrument; from above showing structure of cells.

frequent use for a period of five or six years most of the usable methods—from Hénocque's Hematoscope and Bizzozero's Cromo-Citometro to Sahli's, Haldane's, Grützner's Keilhämometer and von Fleischl-Meischer's—one must conclude that constantly corresponding readings with different instruments are rarely obtained,[1] undoubtedly on account of faulty standardization or lack of standardization in manufacture.

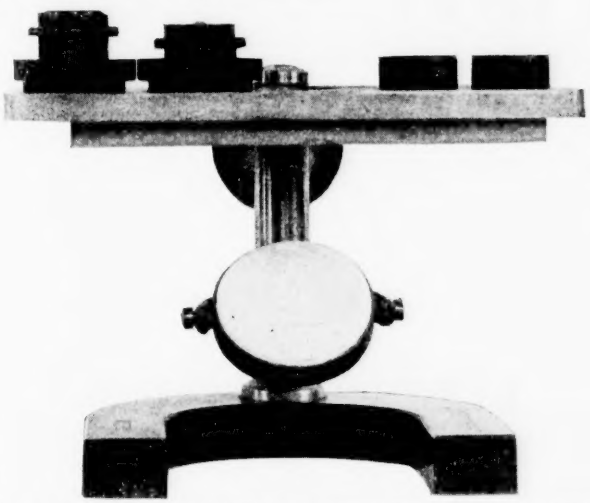

Fig. 2.—von Fleischl-Miescher's instrument; from view showing height of cells.

Judging from experience, the von Fleischl-Miescher (Figs. 1 and 2) instrument is the most reliable, as one obtains it from the retail dealers, and, likewise from experience, the principles made use of in Gower's, Haldane's (Fig. 3) and Sahli's (Fig. 4) instruments are theoretically open to at least criticism and practically are all that one could desire, provided the instruments have been carefully standardized. The advantages in Haldane's instruments are the same as in Sahli's, although the former uses CO-hemoglobin as his standard and compares with this standard a freshly-prepared solution of CO-hemoglobin of same strength as the standard, and the latter (Sahli's) makes use of acid-hematin as a standard and compares with it a freshly-prepared solution of acid-hematin. As an acid solution for Sahli's method I use invariably a 1/10 normal solution of HCl, or, for simplicity sake, a dilution of 9 drops of fresh, strong HCl in 200 c.c. of water; of this solution a sufficient amount is taken to fill the graduated tube to the mark "10."

The simplicity of instruments and technic, the fact that no matter in what condition the circulation and the blood pigment may be (excepting gas (CO) poisoning and methemoglobinemia) the color reactions will be similar to the standards, the ease with which the broken parts may be replaced, and most important of

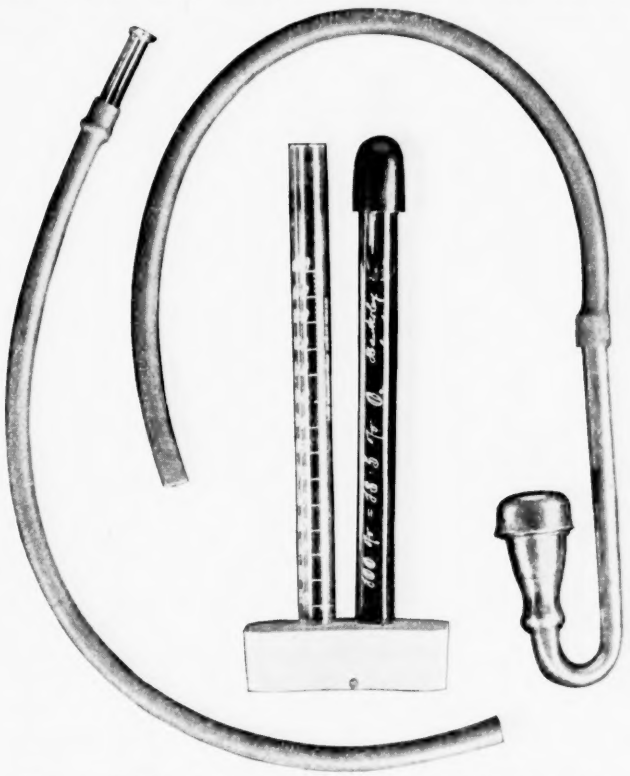

Fig. 3.—Haldane's instrument; metal gas-connecting tube to right.

all the rapidity with which the colors may be standardized in any laboratory, recommend such instruments.

The one objection to Haldane's method is the necessity of using "coal-gas," which to-day is not at hand in all our hospitals and houses; for this reason alone we prefer Sahli's instrument, which has been standardized.

Three years ago (in 1904) when I had taken up a thorough study of the hemoglobin methods, solutions of acid-hematin (1 per cent.) corresponding to Sahli's standard, and of CO-hemoglobin (1 per cent.) Haldane's standard,[2] were prepared, and from appearances

1. Emerson has recently emphasized this fact in the Bull. Johns Hopkins Hosp., January, 1907, 30.

2. Sahli's standard:
Blood ..... 1 part.
Decinormal HCl ..... 10 parts.
Water, distilled ..... to 50 parts.
Glycerin ..... 50 parts (volume.)
Haldane's standard:
Blood ..... 1 part in sterile tube.
Distilled water, sterile ..... 99 parts in sterile tubes.
Coal gas passed through to saturation, and the tubes sealed.

have kept their color perfectly during these three years. The Haldane tubes show a trace of heavy sediment, which does not diffuse to a cloudy solution and so does not interfere with color comparisons.

The Sahli mixture has been diluted to 0.5 per cent. solution for certain experimental purposes, yet it may be accurately read and remains clear without any trace of precipitation. It is otherwise with the instruments purchased on the market, for out of a lot of twenty instruments, after two years use, the majority showed loss

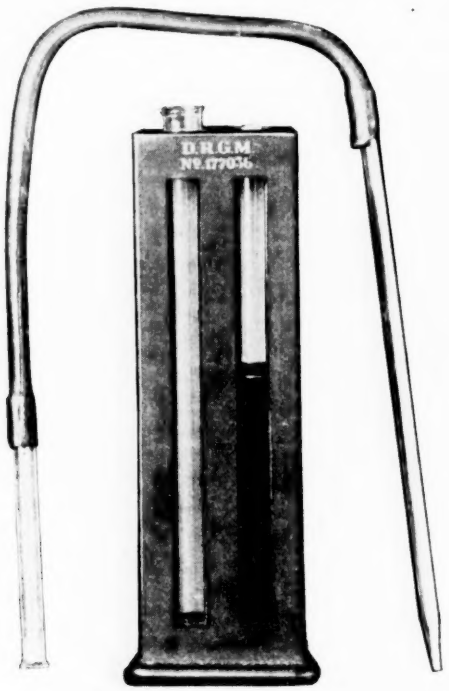

Fig. 4.—Sahli's instrument.

of depth in color and, therefore, high readings, and some of them showed the defect soon after they were obtained. Without doubt some of these instruments are defective when put on the market and others become defective from disuse, the tubes lying horizontally for several months when not being used by the winter classes, so that a brown precipitation streaks along one side of the tube. The kind of blood used in these standard tubes is not known to me, but probably ox or sheep's blood, at any rate, not human.

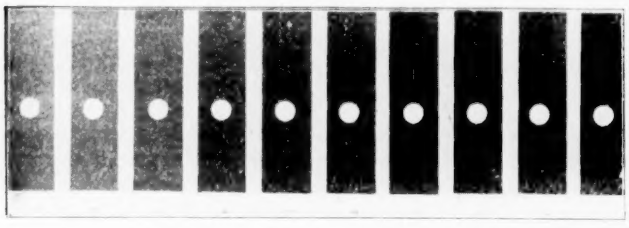

Fig. 5.—Tallquist's paper "Scala."

The standard solutions spoken of that kept their color for three years were made of ox blood and human blood, and neither of them has changed. We have recently opened the standard tubes of these Sahli's instruments and refilled them with 2 c.c. of a freshly-prepared standard solution, and in the class work this year the hemoglobin readings were accurate, after the standardization.

What we wish to call attention to especially is the method of standardization. It is Haldane's method based on the oxygen-combining power of the blood determined by the potassium-ferricyanide-ammonia method, by means of which one may easily estimate the oxygen-combining power of human blood, since only 4 c.c. of blood is required.

The ox blood referred to had an oxygen-combining

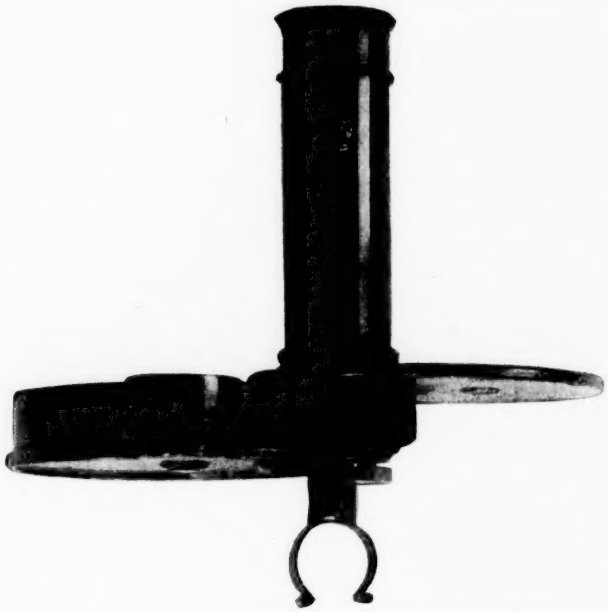

Fig. 6.—Dare's instrument; from above and in front.

power of 21;[3] the human blood used for the recent standardization combined with oxygen in the proportion of 19 to 100 c.c. of blood. Haldane's instruments are based on a blood with combining power of 18.5, this, of course, being adult male blood. The apparatus for the

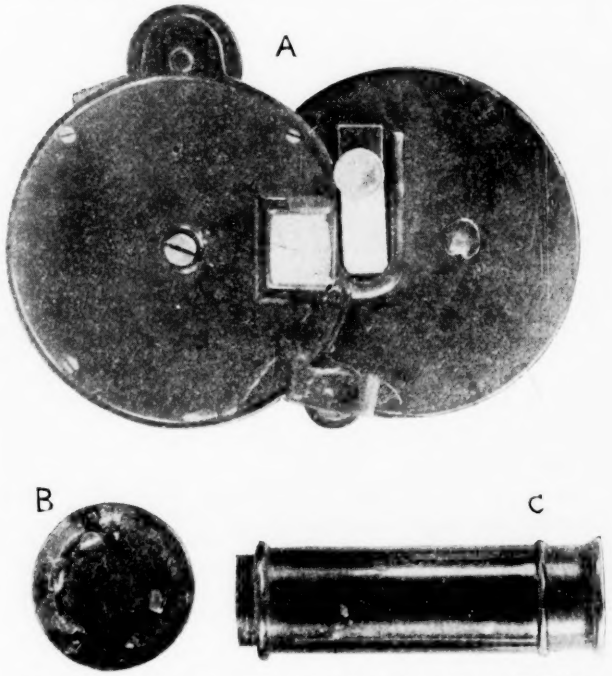

Fig. 7.—Dare's instrument; A, front view; B, candleholder; C, telescope.

estimation of this oxygen-combining power is not elaborate and is easily used; one should refer to Haldane's original articles for details.

3. Oxygen, combining power of 21 means that 100 c.c. of blood will combine with 21 c.c. of oxygen from air.

According to Haldane, the readings for a woman's and a child's blood are respectively 89 per cent. and 87 per cent. of the reading when the standard tube contains adult male blood, as is usual, and from these two factors corrections should be made if one desires to convert percentage readings into terms of oxygen-combining power or grams-hemoglobin.

From observations over the same period of time and from comparison, I do not hesitate to state that estimations of hemoglobin by means of Tallquist's scale (Fig. 5) are mere guesses, although the paper test is a great labor-saving device, since such a method will determine the presence of an anemic blood, yet the degree of anemia can never be estimated.

Dare's instrument (Figs. 6 and 7) is excellent, if one may judge from using only four different instruments, unless one is dealing with cyanotic and plethoric conditions, for here the readings are inaccurate; the one criticism or objection is its fragility.

I would state, then, from experience, that the prevalent inaccuracy of practical hemoglobinometers is in their manufacture, excepting that of the Fleischl-Meischer, and probably also Dare's, although I have used only four of the latter.

With me the most satisfactory instrument, after careful standardization, is Sahli's for reasons mentioned, and for a single reason, the frequent lack of coal gas near our patients, we prefer it to Haldane's. For standardization it is a great satisfaction to find at hand a comparatively simple method based on the estimation of a physiologic property of the blood, viz., Haldane's oxygen-capacity method, in place of a standardization based on an artificially colored mixture corresponding to a certain color-perception.

The methods based on the determination of iron content have not been mentioned, although tested comparatively, because the Hb-content and the iron content do not always run in a fixed ratio, and, secondly, because the iron methods are impossible of clinical application.

We regret that we can not recommend absolutely Sahli's instrument as obtained from the trade; we recommend Sahli's as the best method after the single instrument has been proven accurate or refilled with a standardized solution.

I am indebted to Dr. Leopold Jaches, of the department of pathology, for the photographs.

Those who desire to read further on this subject may consult the following references:

Dare: Phila. Med. Jour., 1900, vi, 557.
von Fleischl: Wien. Med Jahrb., 1885, 425; 1886, 167.
Veillon: Der Fleischl-Miescher Hämometer, Arch. f. Exper. Pathol. und Pharm., 1897, xxxix, 385.
Haldane and Lorrain-Smith: Oxygen-combining power, Jour. of Physiol., 1900, xxv, 295, 331; Hemoglobinometer, Jour. of Physiol., xxvi, 503.
Breyer and Grützner: Münch. med. Wochschr., 1905, August, 1521.
Sahli: Verhandl. Cong. f. Inner. Med., 1902, 233.
Gowers: Tr. Clin. Soc. (London), 1878, xii, 64.
Henocque: Comp. rend. Soc. Biol., 1886, October.
Tallquist: Arch. Général d. Méd., 1900, iii.

Theses Presented for a Professorship in 1574.—Calmette recently presented at a scientific congress, held at Montpellier, France, four theses lately discovered in the archives of the university there. They bear date of 1574, and were presented at a competitive examination for a position on the medical faculty. They are said to give a good picture of the knowledge of medicine at that date, especially as they bear marginal annotations of the questions and answers during the examination, in some parts giving the dialog between the examiner and the candidate.

REPORT OF A CASE OF AMAUROTIC FAMILY IDIOCY.

WITH HISTOLOGIC REPORT ON THE EYES.*

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AND
GEORGE SLOAN DIXON, M.D.
NEW YORK CITY.

For the sake of completeness a brief history of the case is given. At present the mother of the patient whose case is here given is pregnant six months. It is hoped that it will be possible to observe the development of this child from birth.

DR. COHEN'S REPORT.

History.—Female, aged 8 months, of Hebrew parentage, came under the observation of Dr. J. Goldstein, who diagnosed the condition as one of amaurotic family idiocy. There had been no idiocy in the family, four older children being alive and healthy. When the infant was five months old the mother noticed that it was not thriving as had the older children at the same age, that the head was not held erect, and that little notice was taken of the surroundings.

Examination.—The child was stout but flabby. The skin and mucous membranes were pale. Though the behavior was dull and lethargic, there were occasional sudden spasmodic movements of the trunk and extremities. The muscles were flaccid, and the head and back were poorly supported.

Subsequent History.—From this time on the general condition deteriorated, and the child grew progressively weaker and paler. When 17 months old there developed a bronchopneumonia, because of which the patient was admitted to the hospital. At this time the infant was in a semicomatose condition, and there were present the usual signs and symptoms of a severe bronchopneumonia. Apparently, the child was blind; the pupils were widely dilated and irresponsive to light. Ophthalmoscopic examination showed in the macular region of both fundi a pearly gray oval patch with the long diameter vertical, nearly twice the size of the disc. In the center of this area was a sharply defined oval spot of a cherry red color about one-sixth the diameter of the patch itself. Both discs had the appearance of a well-marked optic atrophy. Otherwise, there were no pathologic changes. One week after admission to the hospital the patient died. Two hours and a half later both eyes were enucleated. After one was preserved in 10 per cent. formalin solution and the other in Orth's fluid, they were presented to Dr. Dixon for pathologic study.

DR. DIXON'S REPORT.

Histologic Examination of the Eyes.—The eyes were in the Eno Laboratory the same day they were removed and were immediately measured. The vertical diameter was 21 mm., transverse 21.5 mm., anteroposterior 21 mm. The clear cornea measured 12 mm. vertically by 12.5 mm. laterally. There was nothing unusual about the external appearance of the globes.

Hardening and Staining.—The specimens were subsequently treated in the usual manner; that is, after the formalin specimen had been in the solution for two days, it was frozen and divided, one-half showing the macula being mounted in glycerin jelly for macroscopic study, the other half run through successive strengths of alcohol and finally embedded in celloidin and sectioned. The other eye was fixed in Orth's fluid, followed by Müller's fluid, in which it remained for three weeks; it was then washed, frozen and segments removed from the upper and lower portions of the globe passing through the iris angle, to insure perfect impregnation by the embedding material, which was also celloidin, and finally sectioned. The sections were stained by Hensen's and by Delafield's hematoxylin and eosin, by Van Giesen's nerve stain, by Weigert's stain for medullated nerve fibers, by Birch-Hirschfeld's modified Nissl's, and by Ehrlich-Biondi-Heidenhain.

*Read before the Section on Ophthalmology of the Academy of Medicine, New York.

Microscopic Examination.—Nothing unusual was found in the cornea, iris, ciliary body, lens or chorioid in either eye. The retina was well preserved in Orth's fluid; it had been mechanically detached in both specimens. The first thing to attract attention was the difference in thickness between the retinæ of the two eyes; the formalin specimen appeared shrunken and thin, while the Orth's fluid specimen appeared to be more nearly in its natural condition. In the latter its thickness, 3 mm. to the nasal side of the disc, was 236.6 microns. The macula differed in thickness on the two sides of the fovea, as will be observed in the photomicrograph (Fig. 1). Its greatest elevation was 425.6 microns from the ends of the cones. The temporal side was 303.6 microns. The fovea was flat and broad, measuring 239.4 microns laterally. The margin arose abruptly instead of in the usual gradual manner. The depth of the floor of the fovea below the macular fold was 178.2 microns. True edema was not noted, though there was present the usual spacing out of the external reticular layer a short distance on each side of the macula, which has been repeatedly reported in these cases. Müller's fibers did not appear in their usual form, but as a conglomerate mass not easily distinguished. The multipolar ganglion cells were present in about their usual number outside the macula, but they gave the impression of being swollen, were round in form and measured from 16.6 microns to 23.1 microns. Giant ganglion cells were occasionally seen. Both the nuclei and the nucleoli in the vast majority of the cells were sharp and clear cut, but generally displaced to the side. A few spaces were noted which corresponded to the size and form of the ganglion cell, but there was no trace of its contents, only fhat appeared to be its wall remained. Nissl's stain showed the reticular network of the remaining cells, but it was usually massed about the nucleus, being more or less scanty toward the periphery of the cell. Weigert's stain showed the same dark granules in the cell protoplasm described by other observers. It also showed them in the so called amacrine cells. Dentritic processes of the multipolars were occasionally seen. There were six layers of multipolar cells at the macula on the temporal side, and eleven on the disc side, doubtless due to a fold in the macula. There was no degeneration of the rods and cones, and no changes in the other layers of the retina not already mentioned.

The optic nerve (Figs. 2 and 3) was in a condition of beginning simple atrophy. The connective tissue stroma was in-

Fig. 1.—Section through fovea. Photomicrograph by Dixon.

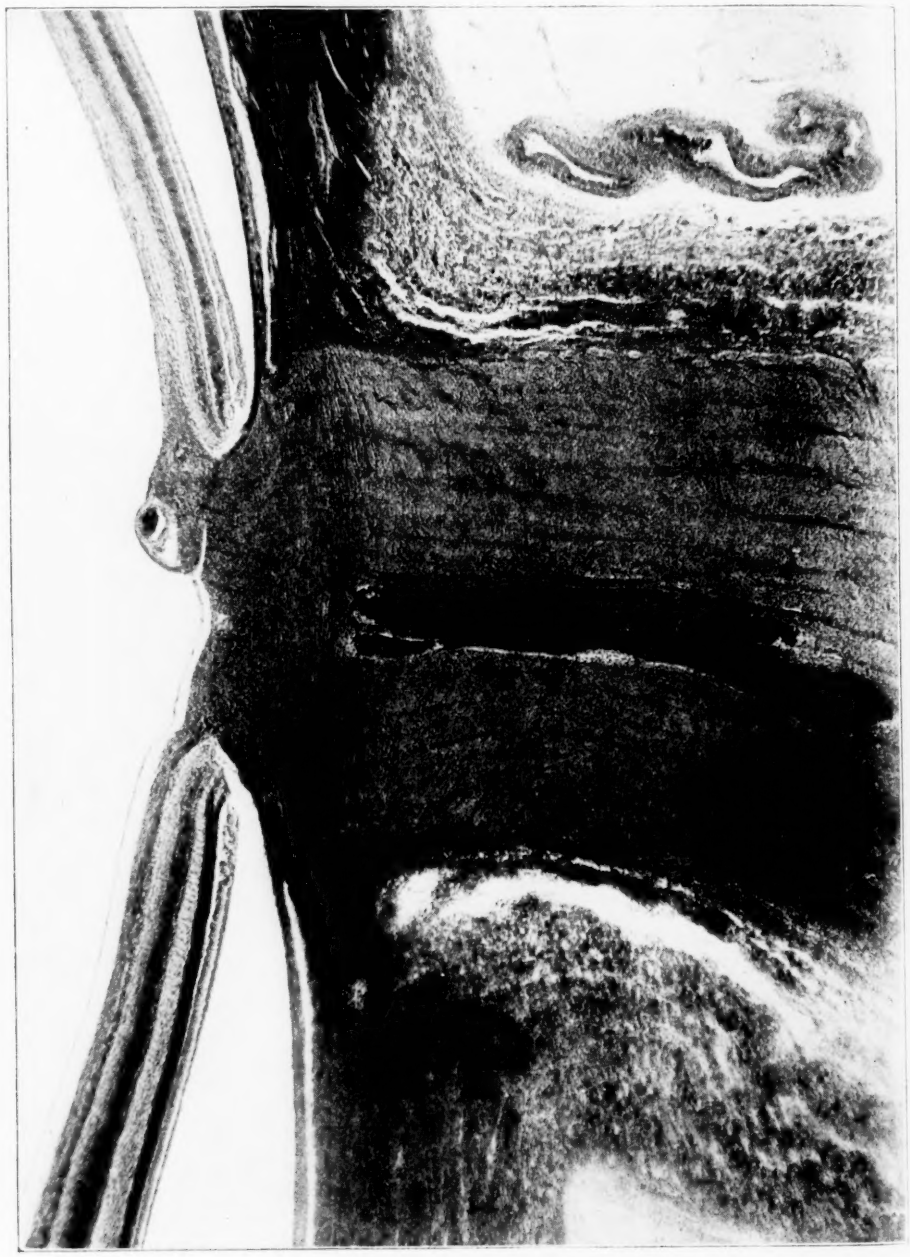

Fig. 3.—Section through optic disc. Photomicrograph by Dixon.

crease and the bundles appeared compressed, but Weigert's stain indicated no localized degeneration. The intervaginal space was not at all well marked.

Amaurotic family idiocy was considered in three papers published[1] a few years ago. The discussion of these papers was general and exhaustive, and the consensus of opinion then was that the disease was one of degeneration of the ganglion cells of the entire nervous system, and that the changes in the retina and optic nerve were simply the ocular manifestations of a general disease.

It was unfortunately impossible to obtain an autopsy in the case just reported. It seems to me that the arrested development theory of Sachs, the degeneration theory of Kingdon and Russell, and the toxin theory of Hirsch fit together very well. There is every reason to believe that a child can be born normal and for a short time give no indication that it will not continue in this condition. We have all seen this over and over again, in fact, it is the rule. A child does not cease to develop when it is able to breathe, and the central nervous system is the most backward of all. If the central nervous system fails to develop properly the finer degenerations must follow, and it is only a step further to the development of toxins due to errors in metabolism.

Fig. 2.—Transverse section of optic nerve at point of entrance of vessels. Photomicrograph by Dixon.

A word as to fixing and postmortem changes. I am of the opinion that the best solution for fixing the retina is Zenker's fluid, that Müller's or Orth's is next, and that formalin alone is the poorest of all. It depends altogether on the individual specimen whether or not the retina be detached by either of the fluids. As a matter of experience, formalin has appeared to be responsible for more detachments than the other fluids. I think we would encounter little trouble in this particular direction if it were possible to discard the use of alcohol. As to postmortem changes, Parsons says:[2]

The finer postmortem changes have been studied by Birch-Hirschfeld by Nissl's method, using thionin as the stain. The results obtained by this extremely delicate method must be accepted with caution, as they are only strictly comparable when the minutest details of technic are kept constant. Postmortem changes commence in the ganglion cells two hours after death. The perinuclear space becomes visible, and the Nissl granules become blurred at the edges, the smallest breaking up. In three and a half hours the nucleus shows vacuoles and commences to shrink, larger and more numerous vacuoles appear in the periphery of the cytoplasm. In five hours the Nissl granules have broken up and formed a dusty, diffuse stain, while the other changes have progressed. In seven hours the cells have been transformed into a mere granular mass.

Practically the same is said of the bipolars. In the same volume, p. 544, he says: "The chromatin diminishes with the exposure to light, and after prolonged exposure to bright light the Nissl bodies break up, vacuoles appear and the cells shrink."

Now, if these statements are correct we can not be too careful in drawing conclusions from the apparent finer details which are brought out by delicate cytologic methods, and it requires no great stretch of the imagination to assume that much of our painstaking labor may be rendered useless by minute changes occurring soon after circulation has ceased.

In conclusion, attention is called to the fact that the eyes in this case were removed and placed in the fixing solutions two and one-half hours after death. The only changes that have been detected are the swelling of the multipolar ganglion cells, the displacement of their nuclei, the retraction of the cell reticulum, the occasional disappearance of ganglion cells, and the general disappearance of Nissl's granules; the appearance of dark granules by Weigert's stain in all the ganglion cells, the peculiar formation of the macula and fovea, the so-called "spacing out" of the external reticular layer near the macula, and beginning simple atrophy of the optic nerve.

I am indebted to Mr. E. B. Burchell for valuable assistance in the preparation of this case.

1. Peterson (Frederick), Hirsch (William), and Holden (Ward A.): Jour. of Ment. and Nerv. Dis., 1898, xxv, 529-560.
2. Pathology of the Eye, ii, 546.

THYMIC TRACHEOSTENOSIS, TRACHEOSCOPY, THYMECTOMY, CURE.

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Much of the literature of the diseases of the thymus gland is devoted to theoretical arguments as to the cause of "thymus death" (thymustod). A child dies suddenly with more or less stridor and cyanosis, and nothing pathologic but an enlarged gland is found at autopsy. The gland, however, does not seem to press on the trachea. The authors then speculate on theories as to pressure on the pneumogastric, pressure on the pulmonary artery, "hyperthymization of the blood," irritation of the large vessels and nerves by the friction of the to-and-fro movements of respiration, paralysis of the vasoconstrictors, status lymphaticus, etc. Theoretic arguments and anatomic demonstrations are brought forward to show the softness of the gland and the relative incompressibility of the trachea.

It has been my privilege, with the aid of the bronchoscope, to demonstrate beyond all doubt on the living patient the purely mechanical nature of "thymic asthma" in one instance. This, of course, does not prove that every case has this same pathologic mechanism, but it does prove the occurrence of that which many, including Friedleben, von Kundrat, d'Escherich and Paltauf, have denied, namely, that a hypertrophic thymus can

compress the trachea sufficiently to obliterate its lumen. It does disprove Friedleben's dictum—*es giebt kein asthma thymicum*—though it would seem more accurate to call it thymic tracheostenosis.

In view of my tracheoscopic findings, it is easy to understand sudden deaths from thymic hyperplasia, for we all know how suddenly the end comes in any form of tracheal stenosis and how impossible it is to get respiration started after it has stopped when there is even slight obstruction, unless tracheotomy be immediately done. And in these thymic cases a long cannula reaching below the obstruction would have to be inserted. With a tracheal lumen diminished to a chink, the slightest engorgement, as from a cough, would be sufficient to cause temporary swelling and momentarily to shut off the passage of air. The coughing and gagging during an examination would do the same thing. Once the air is shut off the usual phenomena of asphyxia are sufficient to engorge the thymus gland and all the vessels passing through the upper thoracic opening, which prolongs the obliteration of the tracheal lumen until death supervenes. Then the recession of the blood and the sagging of the viscera, together with the usual autopsic technic, would serve to allow the trachea to assume its normal lumen. Thus the pathologist finds the gland hypertrophied, but not compressing the trachea.

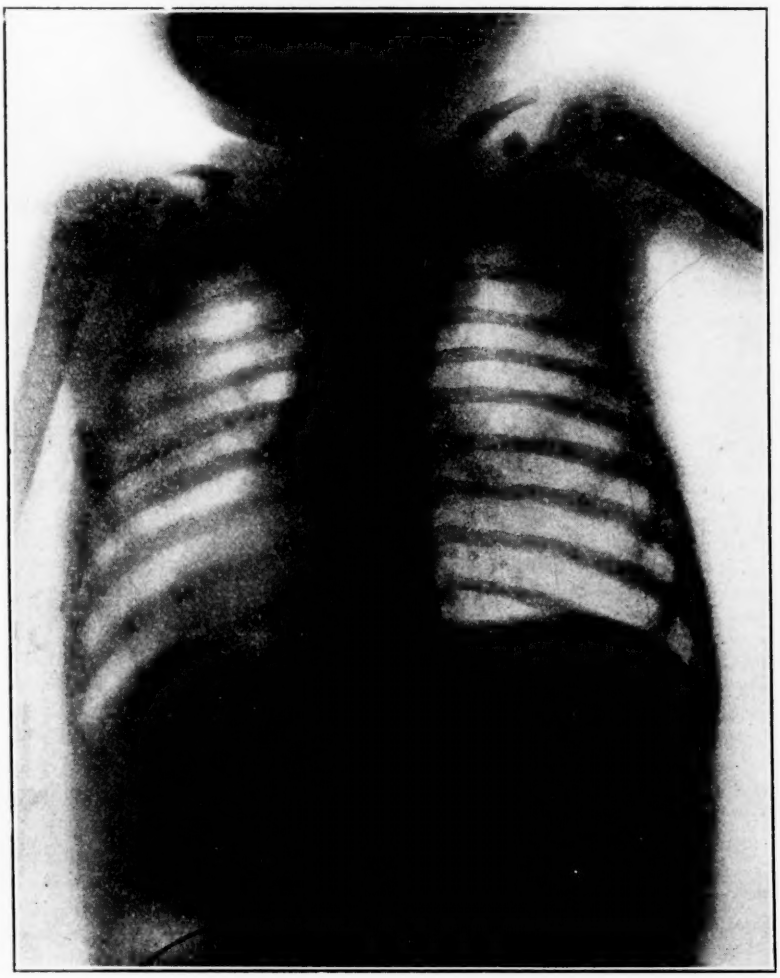

Fig. 1. Radiograph showing enlarged thymus gland.

Patient.—E. L., aged 4, was admitted to the Western Pennsylvania Hospital, in the service of Dr. Ogden M. Edwards, Aug. 30, 1906.

History.—The child is the youngest of eight; one brother died a year ago with typhoid fever, another with tuberculosis. Two others died in infancy. The boy has always been well, except for a mild febrile attack a few months ago; he was not bedfast. Six weeks before admission he went to bed apparently well, but was wakened in the night by a sudden croupy attack. Since that time the difficulty in breathing has been growing steadily worse and is now very marked and stridorous. Dr. John W. Boyce, who examined the child, reported: "Child manifested considerable expiratory dyspnea of obstructive type, made worse by sitting erect. Good color and a fair general appearance. No signs of 'lymphatic constitution.' Pulse rapid but of good quality. Tympanitic note over sternum and at sides, extending farther to right than left. Over same area increased voice conduction, tracheal breathing and a whistling tracheal râle. Over rest of lungs normal puerile breath sounds, the same on both sides. Diagnosis: Obstruction in trachea. Tubes dry; lungs normal."

Roentgen Examination.—I was called to the case and, finding the larynx free from obstruction, suspected a foreign body, and ordered a radiograph. A radiograph by Dr. R. H. Boggs showed the shadow of an enlarged thymus gland (Fig. 1).

Operation.—On September 5, assisted by Dr. J. J. Schoening, I opened the trachea under infiltration anesthesia. The rings seemed of normal resiliency, and the thymus gland was seen to extend abnormally high in the neck, reaching to the thyroid gland, and rising somewhat when the patient coughed. On passing one of my bronchoscopes (Fig. 2) I discovered a scabbard trachea with a chink of not over 2 mm. on inspiration and 1 mm. on expiration, the obstruction extending from the second to the fourth ribs. The tracheal mucosa was collapsed from before backward almost into contact. The collapsed walls opened up ahead of the tracheoscope not unlike the cervical esophagus, and, like the esophagus, the trachea tended to close instead of to open on inspiration. The mucosa looked slightly congested, but was not edematous. The passage of the bronchoscope relieved the dyspnea instantly and when it was withdrawn no air entered and asphyxia threatened, so a long tracheal cannula was inserted in the wound, giving partial relief. From measurements taken with the tracheoscope I had made a special long tracheotomy cannula extending to within 1 cm. of the bifurcation. This gave absolute relief and was worn four weeks, until the operation on the gland could be done.

Postoperative History.—The day after the tracheotomy, discharge from the tracheal wound was very profuse. Numerous moist râles of large size were heard all over both lungs, but within a few days diminished, as expectoration of purulent material became more profuse. There was no bronchitis (Boyce), the râles being produced by pus that had run down from the tracheotomy wound.

On September 8 the child developed a mild tonsillar diphtheria, for which he was transferred to an isolation cottage and placed under the care of Dr. G. W. Grier. The following day 3,000 units of antitoxin were given, and on the next day 1,500 more. By September 11 the membrane had almost entirely disappeared.

After a negative culture the child was released from quarantine on September 28, and was found by Dr. Boyce to have a mild bronchitis of the middle-sized tubes. There was some pallor and a rapid pulse. The abdomen was tympanitic and the stools were of foul odor. These intercurrent affections deferred the operation until October 2. During these four weeks the breathing was normal, except, of course, the usual stridor serraticus. September 28 a blood examination showed hemoglo-

bin 75 per cent. (Tallquist); red cells, 6,780,000; white, 18,000; polynuclear, 73; small mononuclear, 18; large mononuclear, 3; transitional, 8/10; eosinophile, 3 8/10.

Second Operation.—Assisted by Drs. J. H. McCready, J. B. Penrose and John W. Boyce, and with chloroform skilfully administered through the tracheal cannula by Dr. I. H. Alexander, on October 2, the second operation was performed. On removing the cannula for tracheoscopic examination, absolute stenosis followed, owing to collapse of the trachea. The tracheoscope showed a mild acute tracheitis, without edema or ulceration. The cannula was then reinserted. A curved transverse incision was made just below the upper border of the sternum to avoid the tracheal wound. The skin was retracted upward, and the incision carried throughout down to the thymus gland, the sternal attachments of both sternomastoids being severed. The thymus bulged into the wound with each coughing effort. I passed my finger down into the mediastinum, breaking up numerous fine fibrous attachments to sternum, care being taken not to wound the pleura or pericardium. The gland was gradually drawn up with tissue forceps until its tip, which was seen to be drawn in with each inspiration, was turned out of the wound. Several fibrous attachments were ligated and divided, and the lower extremity of the gland was ligated and removed. These manipulations with the finger in the mediastinum were rendered possible by the tracheal cannula, which prevented compression of the trachea; it was noted at this time that the lower tracheal rings were of normal resiliency. All ligatures were attached to the upper border of the sternum and one transverse stitch was passed through the pretracheal fascia and secured to the manubrial periosteum. The sternomastoid tendons were sutured into position and silkworm drainage was passed from end to end of the wound, following which the skin was sutured. A wet bichlorid dressing covered with rubber tissue was applied, and then a bib of oiled silk was placed under the tape holder of the tracheal cannula to try to prevent the coughed-up secretions from infecting the wound. The child stood the operation fairly well, but showed some weakening and rapidity of pulse, while the finger was in the anterior mediastinum.

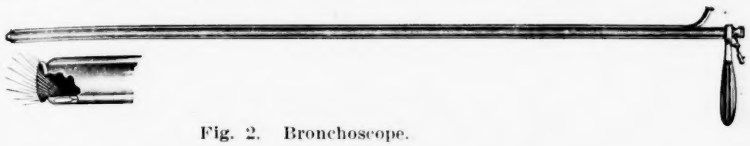

Fig. 2. Bronchoscope.

Postoperative History.—"Patient passed a fair night. Pulse very rapid (over 150), but of good volume. Breathing rapid and irregular. Rattling of tracheal pus prevented satisfactory examination of chest" (Boyce).

The attempt to prevent infection of the wound by tracheal discharge proved futile, as the two wounds were less than 1 cm. apart. The thymic wound healed kindly by granulation, leaving a depressed scar. At each dressing bubbles of clear serum were seen exuding from the mediastinum on expiration, and a probe could readily be passed downward for a distance of 3 cm., but strange as it may seem, this cavity never became infected, which was due, I think, to dressing the wound with wet bichlorid gauze every three hours. This kept the entire wound free from pus. The treacheal cannula was removed on the eighth day after operation. The boy made a slow recovery, due, in my opinion, to the intercurrent affections rather than to the operation. He never showed the slightest stridor after the thymectomy. His last blood examination, three months later, showed: Red, 6,440,000; white, 12,480; hemoglobin, 85 per cent. He was plump and well nourished (Fig. 4).

Histologic Examination.—Dr. Joseph H. Barach examined the gland microscopically and reported as follows: "Section of the specimen showed it to be made up of about equal parts of thymus gland tissues and changed fibrous tissue. Half of the space occupied by the fibrous tissue was composed of hemorrhagic areas, and the lobe as a whole was enveloped in a fibrous tissue capsule under which there was some fatty infiltration. The lymphoid half was divided into lobules separated by fibrous septa; the lobulæ each contained on an average about five corpuscles of Hassal. From this it would seem that the glandular enlargement was due, not to a marked increase in any one element, but that it was naturally large and undergoing the usual changes excepting the hemorrhage."

The upper thoracic aperture in this case was not narrower than normal, as was at first thought possible on account of the old fracture of the clavicle discovered on the radiograph. This fracture must have occurred prior to the child's learning to talk, that is, about two years before the tracheal wound.

The upper thoracic skeletal aperture in a child of this age is very small. Through it must pass the trachea, esophagus, thoracic duct, the innominate, left carotid, left subclavian, internal mammary and superior intercostal arteries, the right and left innominate and inferior thyroid veins, the pneumogastric, sympathetic, phrenic, cardiac and left recurrent nerves, and the longi colli muscles. Besides these, the apices of the lungs, covered by the pleura, crowd upward as far into the opening as they can get. All these structures leave but little room for the normal thymus gland and no space for hypertrophy. In addition, the thoracic opening in a given case may be congenitally small. It is manifestly impossible to insert the little finger through this tightly-filled aperture without compressing the trachea and asphyxiating the patient. For this work in this case I found useful the long tracheal cannulæ that I have used for many years in work on the trachea when stenosed from causes other than thymic pressure.

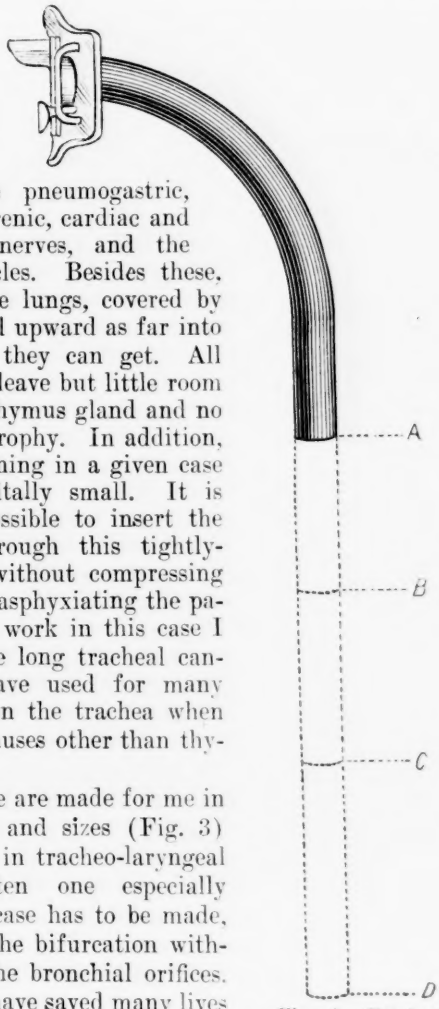

Fig. 3.—Tracheal cannulæ of various lengths.

These cannulæ are made for me in varying lengths and sizes (Fig. 3) for emergencies in tracheo-laryngeal work, but often one especially adapted to the case has to be made, so as to reach the bifurcation without occluding the bronchial orifices. These cannulæ have saved many lives that must have been lost had the ordinary cannulæ been used.

As to whether the pressure caused by crowding the finger through the already full upper thoracic opening caused a laryngeal spasm or not, I am unable to say, but it did not cause any laryngeal paralysis, as an examination the next day showed the glottic movements to be normal.

SUMMARY.

This is the seventh case on record of the cure of "thymic asthma" by thymectomy, the first case demonstrated radiographically and the only case in which the mechanical pathology of the disease was proved by direct tracheoscopic examination of the living patient.

Thymic tracheostenosis is a more accurate term than

thymic asthma and is acceptable, now that the mechanical nature of some cases has been proved. Let thymic asthma be applied to cases supposed to be associated with neuropathic, convulsive, lymphatic, rachitic, hemic or other pathology, if desired, until their exact pathologic mechanism shall have been demonstrated, as has been done beyond doubt in the tracheostenotic case herewith reported.

No patient with thymic tracheostenosis should die of asphyxia if a surgeon be at hand in time, with a very long tracheal cannula, bronchoscope or similar tube which will reach below the obstruction. All the patients who have died after tracheotomy seem from the reports to have died from the want of these long tracheal cannulæ. These cannulæ may be worn indefinitely, but a better procedure in thymic cases is to extirpate the thymus gland, partially or totally, or an exopexy may be done. The long tracheal cannulæ prevent asphyxia from tracheal compression while the finger of the surgeon is passed into the mediastinum to break up adhesions and

Fig. 4. Patient three months after operation.

remove the gland. This removal can not be done satisfactorily by pulling the gland upward with forceps, as the gland would be torn.

CONCLUSIONS.

1. Friedleben's dictum, *es giebt kein asthma thymicum*, is an error. The thymus gland in this case did compress the trachea sufficiently to diminish and to obliterate momentarily its lumen. Thymic tracheostenosis seems a better term for this class of cases.

2. The dyspnea in thymic tracheostenosis is worse in the erect position, and it is expiratory, as might be expected from the increased intrathoracic expiratory pressure, and as demonstrated tracheoscopically in this case. The mechanism of this was demonstrated by the flopping out and in of the elevated gland before it was severed.

3. A radiograph is a valuable diagnostic aid.

4. An absolutely positive diagnosis can be made with the tracheoscope. Upper tracheoscopy is probably not safe in these cases. Tracheotomy should be done under infiltration anesthesia, and should be high, so as to be as far as possible away from the thymectomy wound.

5. A long tracheal cannula, reaching to within a centimeter of the bifurcation, renders the breathing free and the thymectomy safe from risk of asphyxia.

6. Thymectomy is indicated, and is best done by the insertion of the little finger from above downward behind the sternum through a transverse incision after double sternocleidomastoid tenotomy. The insertion of the finger should be of brief duration, as, though the patient with the long cannula inserted is safe from asphyxia, there seems to be serious cardiac inhibition, probably from compression of nerve trunks about the esophagus. One should be careful not to injure the pleura.

7. An almost complete thymectomy is without effect on either the blood or nutrition.

Special Articles

WATER SUPPLY AND PUBLIC HEALTH.

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CHICAGO.

(*Continued from page 1671.*)

CHAPTER IV.

THE SOLVENT ACTION OF WATER ON METALS.

Lead.—The development of chronic lead poisoning among the users of water which has passed through lead pipes is a well-known and a not very infrequent occurrence. It is also known that certain waters act more energetically on lead than others. In communities supplied with such waters, cases of chronic lead poisoning are occasionally very numerous. A celebrated case is that of towns in Lancashire and Yorkshire in England, that used water derived from peaty moorlands and delivered through lead pipes. The citizens of these towns experienced widespread and mysterious bodily derangements for some years, and it was finally discovered that throughout a considerable period lead poisoning had been prevalent among the inhabitants, although its real nature and cause had remained long unrecognized. In many other places (e. g., Somerfeld, Germany, and Lowell, Mass.), numerous cases of lead poisoning, due to the action of water on lead pipes have been reported. The cumulative action of lead on the system and the varying degree of individual susceptibility to its action conspire to render highly dangerous the use of water containing even small amounts of this substance.

It is undoubtedly true that some waters attack lead more vigorously than others, but all natural waters have some solvent action. Among waters that act with especial solvent power on lead are those containing oxygen or carbon dioxid in solution, oxygen being the more actively corrosive. The peaty acids, which sometimes give a strong reaction to waters from swampy regions, are strongly solvent for lead, and some of the most severe cases of chronic lead poisoning have been traced to waters of this character. It sometimes happens that waters coat the inside of lead pipe with a closely adhering film of mineral substance, but the degree of protection conferred by this deposit is somewhat problematical. In general, soft waters have a greater solvent action than waters containing considerable mineral matter in solution, but there are so many exceptions to this statement and the action of the various factors that determine the corrosive action is so complex that no general rule can be formulated. The only sure method of determining to what degree a given water is plumbo-solvent is by testing the question experimentally, and establishing the amount of lead actually taken up.

Zinc.—Considerable amounts of zinc derived from the zinc coating of the galvanized iron, tanks and pipes are often found in water. In some cases, especially when the water has been in contact with the metal for some time, very large amounts of zinc are found. Opinion is divided as to the deleterious effect of the continuous ingestion of waters containing small quantities of this metal. There is evidence, however, that it may at least cause chronic constipation. One definite outbreak of rather severe gastrointestinal disturbance has been attributed to the use of water stored in galvanized iron tanks.[15] Under ordinary conditions there would not seem to be very serious danger of poisoning from this source, except when the water has been in contact with the zinc for a long period, as it is in storage tanks or long service pipes.

Iron.—Corrosion of iron pipes may occur to a considerable extent unless the metal be protected by a coating of some such substance as tar or asphalt. In such cases the gradual clogging of the pipe by the formation of a film of iron rust is the most serious thing that is likely to happen. The occurrence of iron in natural waters and the method of removal are elsewhere alluded to.

The action of water on copper and tin seems to be of little sanitary importance, although it must be noted that pipes made of so-called block tin often contain lead.

CHAPTER V.

THE EXAMINATION OF WATER.

Before entering on a description of the methods for determining whether a given water is desirable as a source of public or private supply, it is perhaps worth while to mention briefly some of the features that constitute a satisfactory water supply. First and most important, is the sanitary quality of the water. This is best although most crudely evidenced by the practical exemption from typhoid fever of the persons using such water; in case this criterion is not available, the extent to which the water is exposed to contaminating influences must be investigated. Finally resort can be had to analytical data.

Other features of a thoroughly desirable public supply are clearness and brilliancy, that is, the water should contain little suspended matter and should be without marked color. It should also be free from objectionable tastes and odors, and should not contain excessive quantities of iron which may produce an unsightly discoloration on standing. From the economical point of view it is important that a water should not be too hard, that is, it should not contain very large amounts of calcium and magnesium salts, either sulphates and chlorids, which cause the so-called permanent hardness and are the encrusting constituents and the elements that lead to the damage of steam boilers. Nor should it contain large quantities of the carbonates, which cause the alkalinity of water and the so-called temporary hardness that is removed by boiling. Excessive hardness demands a consumption of soap on the part of those using the water which is most wasteful.

It is not a difficult matter to determine whether a given water possesses certain of these desirable qualities, but the determination of the sanitary quality is often a rather arduous and difficult undertaking; whereas tests for turbidity, for color and for hardness are applied with relative ease and interpreted with facility, the purity or impurity of a water can often be intelligently passed on only after a varied and protracted examination. It is obvious that the evidence of the senses is not to be trusted. It is possible to suspend many thousand typhoid or cholera bacteria in water in a thin-walled glass test tube without impairing in the least the quality of the water so far as can be determined by the unaided senses. The deception of the senses is well illustrated in the case of well waters which, while usually cool, clear, without odor and pleasant to the taste, are very frequently associated with outbreaks of disease.

Owing to the impossibility in many cases of determining the purity of a water by looking at it, smelling of it or tasting of it, methods of closer and more searching examination are commonly necessary. The sanitary examination of water may be conveniently considered under three heads: (1) Environmental, (2) Chemical, (3) Bacterial.

15. Gimlette, Brit. Med. Jour., Sept. 7, 1901.

1. ENVIRONMENTAL EXAMINATION.

In a great many cases simple inspection of the surroundings or source of a proposed water supply is sufficient to determine its fitness. No chemical or bacterial examination is necessary to condemn the water of a shallow well in the midst of a densely populated community. The practice of discharging sewage into a lake at one point and drawing out a supply of drinking water at a point not far distant can be safely regarded as a mischievous and dangerous proceeding in the entire absence of any analytical data. The late President Drown of Lehigh University once aptly said in this connection that it does not need a chemical examination to decide whether a stream has been polluted by sewage when one can see the sewage flowing into it.

For a proper interpretation of the results of chemical and bacterial analysis, a knowledge of the source of a water is imperative. It has been supposed sometimes that an analyst might be biased in his estimate of the character of a water by his knowledge of its origin, and in accord with this notion persons submitting a sample of water for analysis sometimes think it necessary to conceal the source. The reason for this mistaken conception is that in the popular mind the analyst is believed to test for definite harmful impurities in water. This, however, is not the case; the opinion of the analyst is based on inferences drawn from the occurrence of relative abundance of various substances or elements that are not in themselves harmful, but which indicate with more or less precision the probable presence of actually harmful constituents.

The importance of a knowledge of the environment of a water in interpreting analytical results is clearly illustrated by the difference between ground and surface waters. As usually distinguished, the ground water is that water which fills the interstices of the soil and forms a continuous layer in the crust of the earth. The level of the ground water is intimately connected with the rainfall and may be a few feet or may be hundreds of feet below the surface of the earth. Since the ground water is rainwater that has percolated through the upper layers of soil, it has undergone in the process a certain kind of filtration and does not as a rule contain much color or suspended matter. Waters of wells, both deep and shallow, and many spring waters are familiar instances of ground waters.

Surface waters are those waters freely exposed to light and air, as seen in ponds, lakes, rivers and small streams. Since permanent streams are fed in large part with ground water and since surface water may sink into the ground and join the body of ground water, no sharp line of demarkation exists. The chemical and bacterial constitution of ground and surface waters, however, is often radically different. Waters exposed to light and air permit the existence of many forms of organic life which are not able to develop in underground darkness. One result is that an amount of organic matter which would be sufficient to cause instant condemnation of a ground water might pass without comment in a surface water. Without a knowledge of the source of a water and of the conditions under which it was collected and transported an analyst may fail entirely to interpret correctly the analytical data that he has secured. Since, as will appear, the value of a sanitary water examination depends solely upon the interpretation and not the absolute quantitative results, a knowledge of the source of a water is of paramount importance.

2. CHEMICAL IMPORTANCE.

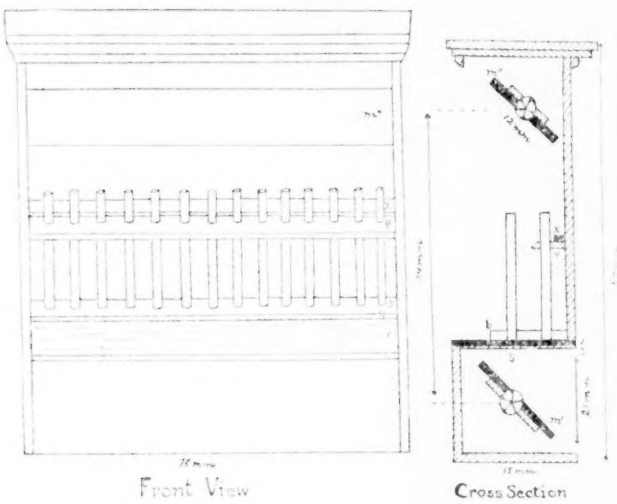
Those chemical constituents in a water[16] which afford the most valuable clue to its sanitary character and history are the various organic matters and their derivatives, especially the nitrogenous compounds, and the mineral substance, sodium chlorid or common salt.

The nitrogenous compounds especially are of great impor-

16. The best full description of chemical methods of water analysis is contained in a Report of Committee on Standard Methods of Water Analysis to the Laboratory Section of the American Public Health Association, 1905, pp. 141. Pub. by the Journal of Infectious Diseases, Chicago, $1.

tance. Analytical processes of great delicacy are employed for the determination of nitrogen in four forms: These are commonly expressed in the analytical tables in the following manner: Nitrogen as *albuminoid ammonia* or *organic nitrogen*, nitrogen as *free ammonia*, nitrogen as *nitrites* and as *nitrates*. A brief description of the methods ordinarily employed in this country in making these determinations will be given, followed by a statement of the significance attached to the results. The results are conveniently recorded in terms of parts per million (milligrams per liter):

(*a*) *Nitrogen as Free Ammonia.*—Five hundred c.c. of the water, or a smaller amount diluted to 500 c.c. if the nitrogen content is suspected to be high, is rendered slightly alkaline and distilled in glass flasks, the distillate being condensed and carefully collected. The ammonia passes over in the distillate. The rate of distillation is usually so adjusted that from 50 to 100 c.c. collects in 10 minutes. The distillate is received in three or more 50 c.c. Nessler tubes,[17] and 2 c.c. of Nessler solution[18] is added to each tube separately. Before each analysis, flasks and condenser are steamed until free from ammonia. In carrying out the determination, the depth of color produced in the distillate from the water sample is compared with that produced in a solution containing a definitely known amount of ammonia (Figs. 1 and 2). This so-called standard solution is prepared by dissolving an accurately weighed quantity of



Figs. 1 and 2.—A front view and cross section of a Nessler cabinet designed to facilitate the comparison of the sample under examination with standard tubes. The standards are placed on a glass shelf and light passed through them to the eye of the analyst by means of the adjustable mirror. For details of this useful piece of apparatus see paper by Stevens and Sackett, Jour. of Applied Microscopy, v., No. 8, 1918.

pure dry ammonium chlorid (3.82 gram in 1 liter) in pure ammonia-free water. In conducting the Nesslerization care must be taken that the distillates and standards are of the same temperature. The Nessler solution is added to the samples and standards simultaneously and the readings taken within one hour.

(*b*) *Nitrogen as Albuminoid Ammonia or Organic Nitrogen.*—To the residue from the last operation alkaline permanganate solution is added and the distillation continued. The distillate may be collected either in tubes or flasks, according to the quantity of ammonia present. The distillate is then Nesslerized and compared with the standards as before.

A more satisfactory method of determining the amount of nitrogen present in organic compounds consists in the determination of the total organic nitrogen by the Kjeldahl process. In this process a measured quantity of the water (250 c.c.) is diluted with a suitable quantity of nitrogen-free distilled water (250 c.c.), rendered alkaline with sodium carbonate as in the free ammonia determination, and the mixture distilled as usual for the removal of all free ammonia. To the residue in the flask is added 5 c.c. of nitrogen-free pure sulphuric acid and the mixture heated under proper precautions until the water is all expelled and the organic matters entirely destroyed. The contents of the flask are then cooled, diluted with 250 c.c. of ammonia-free water and an excess (about 50 c.c.) of strong nitrogen-free NaOH solution added. After thorough mixing, distillation, which at first should proceed very slowly, is conducted in the usual way until about 200 c.c. are collected. Nesslerization of a suitable portion of this distillate is then carried out as before.

The significance of free or albuminoid ammonia or organic nitrogen in sanitary water analysis is due to the fact that the organic substances in the bodies of plants and animals and their excreta are largely composed of nitrogenous compounds. Sewage naturally contains relatively large quantities of these nitrogenous bodies. As soon as these compounds are subjected to the action of bacteria, disintegration sets in and free ammonia, one of the earliest and most conspicuous products of decomposition, is generated. Albuminoid ammonia on the other hand, is not preformed ammonia, but arises from the action of the alkaline potassium permanganate on undisintegrated albuminous compounds characteristic of a less advanced stage of decomposition. Fresh sewage contains a relatively high proportion of undecomposed organic matters and hence of organic nitrogen or albuminoid ammonia, while stale sewage yields more free ammonia. Much discrimination must be practiced, however. The albuminoid ammonia or organic nitrogen found in a water may be derived either from peat or from the bodies of microscopic algæ or from human excreta. The free ammonia, similarly, may have originated from the decomposition of algæ or from that of urine or from the reduction of nitrates in iron water pipes, or may even be due to the presence of mineral salts. In manufacturing centers rainwater may contain considerable free ammonia taken up from the atmosphere. It is not always easy, therefore, to discover the sanitary significance of either free or albuminoid ammonia. In general the importance of the ammonias in ground water is much greater than in surface water although the water of deep wells is often rich in free ammonia, without there being any reason to impugn the quality of the water. The attempt to establish an arbitrary limit to the amount of free ammonia or organic nitrogen that a potable water should contain is liable to result in frequent misconstruction, and will often lead to the condemnation of perfectly wholesome waters.

(*c*) *Nitrogen as Nitrates.*—Several methods are in use for the determination of nitrates in potable water. Two only need be mentioned here, one, the phenolsulphonic acid method, the other the aluminum reduction process. The phenolsulphonic acid method consists in evaporating to dryness a measured quantity of the water (100 c.c. or less if necessary), a small amount of sodium carbonate solution being added to prevent loss from the driving off of nitric acid. To the residue, 2 c.c. of phenolsulphonic acid (conc. H_2SO_4, 148 c.c.; dist. water, 12 c.c.; pure phenol, 24 grams) and an excess of ammonium hydrate (15 c.c.) are added. This forms a yellow substance, ammonium picrate, and the intensity of color produced is compared with tubes of standard colors prepared by treating in the same manner a standard nitrate solution made up with accurately weighed quantities of potassium nitrate. The presence of chlorids interferes somewhat with this process, but this difficulty can be surmounted by determining the amount of chlorin in the water under examination and adding an appropriate quantity of a standardized sodium chlorid solution to the standard sodium nitrate solution used in the determination.

The aluminum reduction method is preceded by the removal of the free ammonia from the water by boiling. After cooling a strip of aluminum foil is introduced into the water which is then placed in a water bath at about 35 C. The reduction of

17. Nessler tubes are flat bottomed tubes of clear glass which hold something over 55 c.c. and should be so selected as to have a uniform distance (about 8½ in.) between the bottom and the 50 c.c. mark.

18. This reagent is prepared by adding a saturated mercuric chlorid solution to potassium iodid solution (50 grams in minimum amount of cold water) until a slight but permanent precipitate appears. Potassium hydrate (400 c.c. of 50 per cent. solution) is then added and the solution diluted to one liter. The solution improves on standing, and will give a yellow-brown color with very small quantities of ammonia or ammonium salts. The formula is as follows: $2(KI, HgI_2) + NH_3 + 3KOH = NH_2Hg_2IH_2O + 7K + 7KI + 2H_2O$.

nitrates and nitrites to ammonia is usually complete in about 12 hours. The contents of the reduction tube, are then transferred to a distillation flask, suitably diluted, and distilled and Nesslerized in the usual manner. Proper deduction being made for the nitrites present, the amount of nitrate that has given rise to the ammonia by the reduction process with the aluminum can be readily computed.

(d) Nitrogen as Nitrites.—The method proposed by Griess is the one most in use at present. It depends on the formation of a red color due to the azobenzolnaphthylamine sulphonic acid a substance produced by the addition of sulphanilic acid and amidonaphthalene acetate to an acidified solution of nitrite.

These solutions may be added separately or mixed. The water to be examined is acidified, the sulphanilic acid and naphthylamine hydrochlorid added, and the mixture set aside for about 30 minutes. The depth of the pink color that develops is compared with the color produced by the same procedure in accurately standardized solutions of sodium nitrite. The sodium nitrite is best prepared from silver nitrite in order to insure its purity. The nitrite test is exceedingly delicate and is able to reveal the presence of one part of nitrogen as nitrite in 1,000,000,000 parts of water. Fluids exposed to the air, especially to the air of a room in which gas is burning, often absorb much nitrous acid, and the determination may be completely vitiated by lack of adequate precautions.

The amount of nitrates and nitrites found in natural waters often sheds considerable light on the sanitary character of the water. The importance of these substances is due to the fact that the salts of nitrous and nitric acids form important links in the cycle of nitrogen on the earth's surface. Briefly stated, this cycle consists in the decomposition of organic nitrogenous compounds by the agency of bacteria with the consequent production of free ammonia which is itself then oxidized, by particular species of bacteria, to nitrites; these in turn are oxidized to nitrates. The term nitrification has been applied to this process. The fully oxidized nitrates may now serve as food for green plants, either microscopic algæ or higher forms, and the nitrogen may thus again be converted into organic nitrogen. The appearance of nitrites in a natural water often indicates, therefore, the presence of one of the earlier stages of the decomposition process and in a great many instances the presence of nitrite has been found associated with a water of a suspicious or highly deleterious quality. The completely mineralized nitrates, on the other hand, frequently have little or no sanitary significance. When present in marked excess, indeed they may show that pollution of the water has occurred in the past, but that it happened at a relatively remote period. Nitrates in large amount in a well water, together with other evidence, may indicate that the well receives at times contaminating matters, but does not necessarily give any clue as to the date at which such contamination last occurred. To summarize, the nitrogen compounds not only by their quantity furnish some information in regard to the extent of pollution, but by the state or stage of oxidation in which they are found give important testimony as to the recentness or remoteness of the pollution.

The Oxygen Consuming Capacity.—This determination is based on the ascertainment of the amount of oxygen required to oxidize the organic matter in water and is concerned chiefly with the organic carbon. The estimation is made by acidifying with sulphuric acid (10 c.c.) a measured quantity of the water (100-200 c.c.); 10 c.c. of standard potassium permanganate solution (0.4 grams per liter of distilled water) is then added and the sample allowed to remain in boiling water for a definite period, more permanganate from a burette being added if necessary to prevent complete loss of color. In all comparative work the period of heating must be precisely the same, whether 2, 10 or 30 minutes (preferably the latter.) The longer the boiling process is continued the greater the amount of oxygen consumed and the higher are the results. After removing the sample from the water bath, a measured quantity (10 c.c.) of ammonium oxalate solution (0.888 gram in 1 liter; 1 c.c. is equivalent to 0.0001 gram of oxygen) is added to destroy the color, and then standard permanganate solution is run in from the burette until a faint pink tinge again appears. From the total amount of permanganate solution used up, less that neutralized by the oxalate solution, the amount of oxygen required to oxidize the organic matters in the water can be computed. This process has only relative value, and in any given series of analyses, quantity, time and temperature must be made strictly uniform.

Chlorin.—The determination of chlorin, like volumetric determinations in general, depends on a color change. When a solution of silver nitrate is added gradually to a solution of a chlorid which has been colored yellow by the addition of a little potassium chromate, white silver chlorid will be precipitated until the last trace of chlorin has entered into combination, at which point a red coloration due to the formation of silver chromate will begin to appear. The chlorin ordinarily found in natural waters occurs in the form of common salt, the presence of which may be due to either mineral salt deposits or to the entrance of sewage. In well waters near the sea, chlorin is found in greater abundance than in similar waters inland. In some parts of the country, e. g., Massachusetts and Connecticut, the "normal" chlorin has been definitely determined, that is to say, it is known what amount of chlorin is normally present in the unpolluted well and spring waters throughout the territories examined. The significance of chlorin in sanitary water analysis rests on the fact that any excess of chlorin over and above the normal chlorin of the region is often derived from sewage, sink drainage or other sources liable to harbor dangerous elements. In those localities for which the normal chlorin has been satisfactorily ascertained, chlorin determinations, consequently, may afford very important evidence in respect to the amount of undesirable drainage that has entered a water.

On the data secured by the analytical processes above described, the sanitary chemist places his chief reliance in forming his opinion concerning the sanitary character of a water. It may be noted that all these criteria are empirical and relative, not absolute and final. The nitrites, chlorin and other substances for which the chemist tests are not found in ordinary waters in any such quantity as could conceivably produce injurious effects of any kind. The chemical constituents that are sought for in sanitary water analysis are not in themselves the dangerous elements in polluted water, but their presence and relative abundance merely supply indications more or less precise as to the sanitary quality of a water or its liability to become contaminated.

It follows from the foregoing that any attempt to maintain fixed standards of chemical purity in sanitary water analysis or to condemn in a mechanical fashion waters that contain certain constituents in apparent excess is based on a fundamental misapprehension. Beef tea or eggnog may contain amounts of albuminoid ammonia and chlorin far above the amount that would be thought admissible in a potable water, and are none the less wholesome. Interpretation of the results of chemical analysis can only be warranted by a careful study of all the data obtainable and, as has been pointed out, a correct interpretation is often impossible in the absence of information concerning the source and surroundings of the water sample. So important, in fact, has this environmental examination become that in recent years investigators often lay little stress upon either chemical or bacterial examination in cases in which data can not be obtained regarding the collection, transportation and sources of a given sample. The chemical examination, in particular, is considered to-day as a substantial aid in supporting a judgment as to the character of a water rather than as the sole basis on which an opinion can be formulated.

(To be Continued.)

Inhalation of Oxygen in Vomiting of Pregnancy.—The *Journal de Méd. de Paris* for Sept. 30, cites Mayor to the effect that he has witnessed remarkable benefit from inhalation of oxygen in the uncontrollable vomiting of pregnancy. Improvement was evident after the first inhalation of from 5 to 10 liters, and after a few more applications normal conditions were restored.

CONCENTRATION OF EFFORT IN MEDICAL SOCIETIES.

A. L. BENEDICT, A.M., M.D.
BUFFALO, N. Y.

In spite of the utmost conservatism in joining organizations, I find that, beside belonging to the county, district, state and national organizations in affiliation with or rather component parts of, the American Medical Association, I belong also to four other distinctly medical societies. This does not include honorary membership, or *de facto* alumni membership in five or six others, and membership in one or two scientific organizations bearing somewhat closely on medicine. There are also, at least five other, distinctly medical organizations, in which I ought really to have membership, if I followed the advice of my friends and my own first inclination.

From this personal experience it is obvious that any fairly active physician might easily and without pushing himself in the least, hold membership in twenty-five or thirty medical organizations, while it is altogether probable that one with the instincts of a "joiner" could increase the list well toward a hundred.

It seems pertinent to question whether such diffusion of energy is economic. It needs no argument to establish the fact that specialization of interest is necessary in medical as in other organizations. On the other hand, such specialization is, to a large degree, compatible with unity, subject to the establishment of sections, more or less completely separated from the main body.

In my home city, which is doubtless typical of most cities of the first and second magnitude, the most active medical work is done by a local academy of medicine, open to all physicians in good standing who have had two years' practice. Practically, even this restriction amounts to little as, from the beginning of practice, physicians are not only welcome but are urged to attend meetings and, in the face of some individual opposition, even undergraduates are frequently present and have, on a few occasions, presented papers. While known as the Buffalo Academy of Medicine, membership is enjoyed by many out-of-town members.

Since the fusion of the state society and the association, the membership of the academy is practically identical with that of the county society. Curiously enough, there formerly was a controlling element in the latter organization which was not especially interested in the scientific and literary aspects of medicine, and this early precedent has been perpetuated to some degree, in that business rather than medical science marks the meetings of the county society. There are in the city also five or six, perhaps more, semi-social clubs of physicians, nearly or quite all of which do excellent medical work.

Now, independently of the belief that every good-sized city ought to be a county, in the political sense, I would raise the question, not in any local way, but as a general principle, why the dues, organization and scientific and social momentum of all these essentially local units should not be combined? It would then be possible to have one great society, with authority to throw its influence in any desired direction. This could be exerted in securing legislation or municipal and county sanitary reforms, combining social and scientific features—the former having for some years been a recognized function of the academy—and enjoying, at a less average total per capita tax, a much larger income than have any of the separate societies. It would thus better be able to supply the urgent demand for permanent quarters, an adequate medical library, and other advantages for which cooperation is necessary.

Unquestionably convenience and common sense would dictate that such a united society should not exercise all of its functions at any one meeting. For that matter the by-laws of both the county society and the academy provide that certain business shall be transacted at specified meetings and the academy resolves itself, on four successive meetings in each month, into sections for considering various subdivisions of medical art and science.

In this state, as doubtless in others, there are several societies covering areas analogous to those of the district branches of the state society. At the risk of seeming inconsistent, I would advocate the retention of the former, rather than the latter. This view is based on three grounds: 1. As a matter of practical experience, the independent organizations seem to be more enjoyable, interesting and valuable. 2. There is no urgent need of a formal, official organization intermediate between the local and the state societies. 3. While no serious, nor indeed in my opinion any, indications of officialism menace the profession from the present workings of the huge machine of the American Medical Association, it is not a bad plan to have an independent check on any possible tendency in this direction.

A considerable number of special organizations commonly meet in connection with the American Medical Association and for the most part to their mutual advantage. Some of these organizations, as of editors, examiners, etc., and the American Academy of Medicine, obviously can not be affiliated officially with the American Medical Association. There remain, however, a considerable number of national societies having no exclusive requirements for admission, some meeting at the same time and place as the national organization, others independently, which might well be reorganized as special sections of the American Medical Association. In the same way a local medical society, beside the commonly recognized divisions of medical art and science, might have smaller sections to carry on certain lines of study in which the majority of the members would not be interested.

This leads me, with some hesitation, to raise the question whether it is advantageous to have medical societies whose principal reason for existence is the establishment of a medical aristocracy. In using this expression, I want to be understood in the literal sense and not as a demagogue, making an "impassioned appeal to the peepul" in a Fourth of July oration. Note, therefore, that I do not imply an answer to the question. It must candidly be admitted that up to a few years ago—almost exactly to the year 1900—there was need of medical organizations to discuss more serious issues and in a more authoritative way than could be done at the meetings of the American Medical Association. This need probably always will exist for expert laboratory investigators along certain lines but, so far as the various branches of clinical medicine are concerned, it ought to be seriously and frankly considered, whether (1) better results can be obtained by exclusive standards of membership or by mingling men of quite diverse degrees of attainment in the same society; (2) whether it is feasible and advisable to allow the establishment of special sections of the American Medical Association requiring special attainments or greater or less limitation of practice; (3) whether in general medicine and surgery it is advisable and economic for approximately the same nucleus of leaders to maintain two distinct organizations, of different grades of exclusiveness, and if so (4) whether these gradations should be recognized tacitly as calling for different grades of scientific work.

As stated, I do not pretend to decide these questions for others nor even for myself in an offhand way. To avoid the suspicion of having raised a rhetorical question that requires a certain answer, I would confess that the declaration that all men are born free and equal appeals to me as the expression of an aspiration rather than as a fact. Moreover, there are times when one may humbly and sincerely thank God that he is not as other men are. But it does seem to me worth while to consider carefully whether there is sound practical wisdom in carrying on all of the multitudinous independent medical organizations that we have at present. I feel that consolidation and unity along truly democratic lines should be favored unless there are cogent reasons to the contrary. It is only in a society with liberal requirements as to membership that great minds can exert their best influence and receive the greatest credit, by virtue of the educative value of such societies to minds of less power.

A multiplicity of organizations is expensive, directly in money and in time, neither of which is superabundant with physicians. The mere matter of dues is a minor factor and yet, by itself, it would double the efficiency of the profession as a whole, so far as available funds for functional activity are concerned. I am perfectly willing to confess that the financial loss in traveling expenses, hotel bills and loss of practice, in making two or three separate trips to attend medical meetings that might be united, would be a determining argument in leading me to vote for the amalgamation of such societies whenever practicable. A purely statistical study of medical polity leads to the belief that at least 90 per cent. of the medical profession must be seriously influenced by such considerations. I do not claim to have a practice of extraordinary magnitude, and yet there have been numerous occasions when I have been obliged to miss meetings of importance because either sound business reasons or professional responsibility or even a sentiment of humanity, or all three, kept me at work at home. The indifference to these considerations implied by the readiness with which medical meetings are multiplied, is something that amazes the doctor in active private practice. It seems proper to mention this personal opinion since, if it is the experience of a specialist with comparatively little emer-

gency practice, it must apply *a fortiori* to a surgical specialist and to the general practitioner.

But such reasons for medical concentration are of very insignificant importance as compared with the possible results of unity of effort, condensation of literature, consequent facility for keeping track of medical progress and the economy of executive effort. There is no question but that unity of the profession in the State of New York was delayed for years after it was desired by the great majority of both organizations, simply by the fact that two societies appealed to the personal vanity of would-be medical politicians. Now there must be men to conduct the affairs of all organizations and, even in medical societies, there is inevitably a class of men who crave offices for selfish and petty reasons. But, the larger and the greater the society, the less will be the influence of the medical politician, the less opportunity will there be for him to exist, the more useful will he be, whatever the fault in his motives, and the greater will be the tendency to recognize genuine executive ability and to breed true statesmanship, as well as to honor with offices, men of influence, in strictly medical and scientific ways.

Clinical Notes

A SIMPLE METHOD OF EXCISION OF THE FAUCIAL TONSIL.*

THOMAS CHEW WORTHINGTON, M.D.

Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital.

BALTIMORE.

The tonsil lies lengthwise between the two palatal arches; superiorly it is buried in the "supra-tonsillar" fossa and it extends downward as far as the base of the tongue, where as lymphoid tissue it may reach much lower and be lost in the lateral pharyngeal wall. It

Fig. 1.—The Seiler knife—about ½ size.

may be closely adherent to one or both pillars, and either lie clearly in view or be embedded between the arches, and be well covered or obscured by the adherent fold from the anterior pillar, known as the plica-triangularis. That the diseased tonsil should be removed from its matrix or bed as completely as possible does not now admit of argument, and in bringing this subject before the Section this evening nothing new is claimed except the method of excision. The improvement in the operation which I shall describe consists in its simplicity, chiefly through the use of the Seiler knife (Fig. 1), double-edged, curved on the flat and devised for septal work. This, with four other instruments, the tongue depressor, the tonsillar syringe, the Myles tonsillar punch forceps and the Pynchon tonsillar forceps, enables us to make a rapid and clean excision. The operation to be described is applicable to any form of tonsil. As you well know, there are great differences in form and the difficulties of removal likewise vary greatly. To illustrate the operation I shall describe the tonsil that is the most difficult of all to remove. This variety of tonsil is buried deeply in the supra-tonsillar fossa, and is in close contact with the uvula, extending well below the base of the tongue, adherent to the posterior pillar in its entire length, and almost completely enveloped by the triangular membrane, which is so thick as to obliterate the anterior palatal arch, even on close inspection. In beginning this operation on, I will say, the left tonsil, the surgeon will use the tongue depressor with his right hand, with the left the adrenalin-cocain solution should be injected well around the gland, particularly in the supra-tonsillar fossa, and in the lower third, where the lymphoid tissue about the base of the tongue is sensitive and bleeds easily. Should the anterior pillar or membranous fold be drawn too closely over the tonsil, the injections should be made through the pillar. If this procedure is carried out properly, the operation is painless and practically bloodless.

The patient then holds the tongue depressor, the operator, with the Pynchon forceps in the left hand, seizes and draws downward and forward the extreme upper part of the tonsil, at the same time severing, with the Seiler knife held in the right hand, the attachments to the fossa (Fig. 2). The tonsil is then seized at a lower point, but pulled on very lightly, while the knife is drawn firmly down its length just within the anterior pillar, completely dividing the triangular fold and disclosing the glandular tissue within (Fig. 3).

Should the posterior pillar be adherent as in the case under description, the knife is taken in the left hand, and with the forceps in the right the tonsil is pulled for-

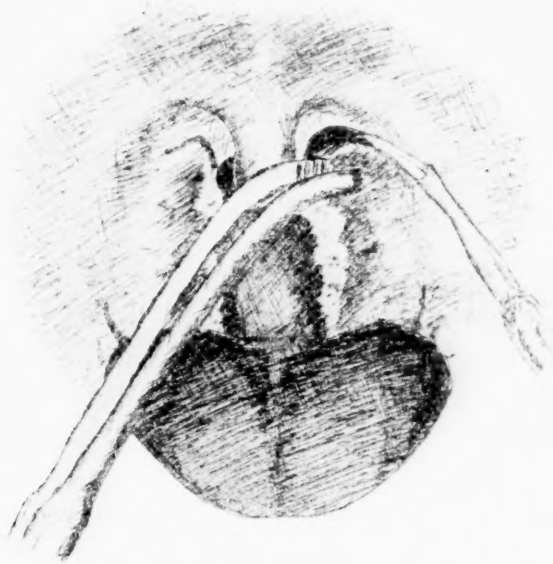


Fig. 2.—Severing the attachments to the fossa.

ward and outward, at the same time severing its adhesions with the pillar (Fig. 4). The knife is again changed to the right hand and with the forceps in the left, drawing strongly on the tonsil, with a few strokes the excision is completed. The forceps are then used to discover any remnants large enough for removal with the knife. Or the Myles tonsillar punch forceps may be used, and are particularly useful in completing the work in the fossa and in removing any superabundant lymphoid tissue left as a continuation of the tonsil down the pharyngeal wall. The time occupied in the local anesthesia for both tonsils depends on the patient and the syringe and will average about ten minutes. The time necessary for the actual operation on both tonsils should be from two to six minutes. There is usually, during the peritonsillar injection, a period of high arterial tension, due to the adrenalin preparation, quickly followed by faintness, which almost as quickly passes off.

I have found a dental obtunding syringe, sterilizable, and with a long, specially-made needle, the most useful. The syringe should be held with the barrel between the

* Read before the Laryngological Section of the Maryland Medical and Chirurgical Faculty, March 22, 1907.

index and middle fingers, and the broad flat head of the plunger against the palmar surface of the thumb, as used by dental surgeons. This gives complete control of the instrument.

The solution which I have found most satisfactory is made up of one part of a standard suprarenal preparation to six or eight parts of the following solution: Modified spray, Seiler, 1 part; distilled water, 2 parts; cocain muriate, two-thirds of 1 per cent.

The solution can be further diluted, but usually at

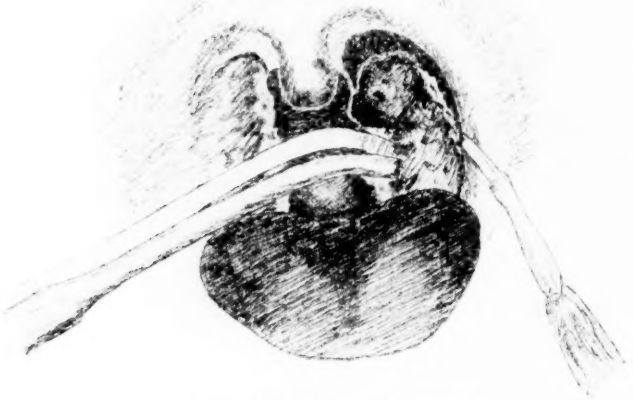


Fig. 3.—Dividing the triangular fold.

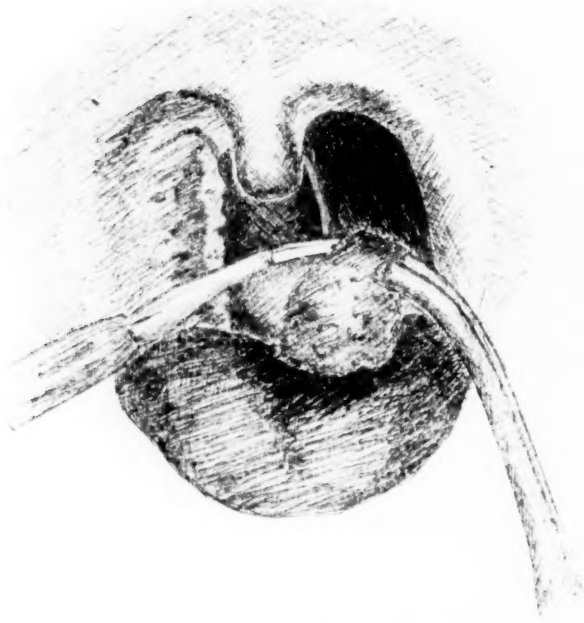


Fig. 4.—Severing attachments to posterior pillar.

the expense of pain and bleeding. The operation is greatly facilitated by holding the knife in the right hand for the left tonsil and in the left hand for the right tonsil. The convexity of the knife should, with rare exceptions, be kept away from the tonsil and its point closely watched to prevent wounding the posterior arch or the root of the tongue, both of which are easily injured. The reaction is about as great as in other operations on the tonsils.

I have described the operation as performed with a local anesthetic because this quite suffices to make the operation painless and because it is easier, less bloody and therefore preferable. In many cases, however, we are obliged to do the operation under general anesthesia. The anesthetic I prefer in these cases is ether. But even when done under general anesthesia it is necessary to inject the tonsillar region as described above with the adrenalin solution diluted in about the same proportion with sterile water so as to lessen the hemorrhage.

After a most complete dissection by this or other methods, some tonsillar tissue almost always appears after healing, especially in the lower third, near the base of the tongue, which, unless diseased, should not be closely resected, as its purpose is partly for support, and the greatest danger from hemorrhage is in this region. I have found the glycerite of tannic acid very useful, applied directly after operation, to be followed for several days by the frequent use of a cleansing mouth wash and gargle.

As to the after-treatment, I would add that I consider it best to keep the patient in bed for several days.

The operation as described has been performed in many cases at the Baltimore Eye, Ear and Throat Charity Hospital thus far with uniform success.

1022 Madison Avenue.

ICTERIC PRURITUS.

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KANSAS CITY, MO.

Itching, even when intense in character, is too frequently a concomitant symptom of jaundice to elicit much comment. The following instance, illustrative of a certain class of patients who seek the dermatologist for relief, is exceptional enough to warrant a more than passing interest:

History.—Mr. P. was referred to me in November, 1906. He was 50 years old, married, a bookkeeper by occupation, and his general health had always been fairly good. At the age of 35 he had experienced a short series of painful attacks of indigestion, but there had been no recurrence. His complexion has been sallow and the sclera somewhat yellow even since he can remember. For the past ten years his weight has remained practically the same, 137 pounds. Appetite and digestion are good. At times the feces have been lighter in color than normal, this being marked when he first consulted me. In July, 1906, he suffered from "chills and fever," but blood examinations failed to show the presence of malarial parasites. These attacks did not respond to medication (quinin and arsenic), but continued to occur at irregular intervals. The rise of temperature was seldom over 1.5 or 2 degrees F.

Examination.—Heart action was good, 65 to 80 a minute; blood pressure was 135 mm. Hg. (Riva Rocci). A careful examination of the urine by a competent pathologist failed to reveal the presence of any abnormal condition. It was claimed at one time, prior to my seeing him, that a glycosuria was present. The only thing complained of by the patient was an intense itching over the entire body. He had suffered from it for over a year in spite of the efforts of eleven different physicians and the use, either locally or internally, of almost every imaginable remedy. So severe was the pruritus and so intense the suffering that the surfaces within reach of the hands were torn and streaked with bloody scratches and the patient was almost worn out by loss of sleep. The itching was worse at some times than others, but the exacerbations could be referred to no definite hour in the day. A diagnosis of gall-duct obstruction was made, probably due to stone. A skiagraph was taken by Dr. O. H. McCandless and the shadows of two cholelithiac masses were found about 8 cm. apart.

Treatment and Result.—A cholecystotomy was performed and a large ball-valve stone removed from the common duct, in

addition to a mass of smaller stones in the gall-bladder. Unfortunately the patient lived but a few days afterward, long enough, however, to become free from the intolerable itching which had been the indirect cause of the operation.

HERNIA OF THE ADDUCTOR POLLICIS MUSCLE.

J. CLARK STEWART, M.D.
MINNEAPOLIS.

This unique and interesting case came into my City Hospital service, and is reported on account of its rarity and because of the unexpectedly good functional result:

History.—C., male, aged 19, in the employ of an ice company, had his hand caught between two blocks of ice and severely pinched. He tied it up and came at once to the hospital.

Examination.—The hand was found bruised but without injury to the skin except between the thumb and forefinger, where there was a ragged hole, completely filled by a protruding mass, which twitched both spontaneously and on irritation.

Treatment.—The patient was anesthetized and the hernial mass was found to be the adductor pollicis muscle, which was completely detached from its origin on the third metacarpal bone, but still remained attached by its tendonous insertion. As the motor nerve was found to be dissociated from the

muscle, the latter was cut away close to its insertion and the wound sutured and drained.

Result.—The boy made a good recovery and had a very satisfactory restoration of the function of his thumb.

INTRAVASCULAR PHAGOCYTOSIS IN INFLUENZA.*

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Associate Professor of Pathology, Indiana University.
AND
HAROLD O. RUH.
Assistant in Pathology, Indiana University.
BLOOMINGTON, IND.

This paper is designed simply to put on record a very striking example of phagocytosis observed in a case clinically diagnosed as influenza. We regret that the data are incomplete, but the phenomenon was not discovered in time for more complete observation.

History.—On the evening of Feb. 23, 1907, one of the workers in the laboratory was taken ill with a slight fever, headache, coryza, sore throat, cough, muscular pains, and mental depression. No physical or microscopic examination was made. The patient, a man, received no treatment, except a restricted diet, rest in bed, and frequent hot baths. The illness was regarded as a fairly severe case of influenza, an epidemic of which was prevalent at the time. Twenty-four hours later one of his tonsils became slightly involved, and discharged a necrotic mass, but at no time was the tonsil painful or swollen. The fever continued till the evening of February 26.

Blood Examination.—On the morning of February 27 the patient visited the laboratory; he complained of no symptoms except a slight cough and headache, and a feeling of weakness. About 20 c.c. of blood were drawn from his arm by means of a hypodermic needle and a small bleeding flask on this day. This blood was immediately defibrinated by means of glass beads, and was used in a complex experiment in phagocytosis. About forty smears of this blood were made. These were stained, twenty-four hours later, by Wright's method, when it was found that every polymorphonuclear leucocyte present was filled with cocci and small bacilli; the number varying from five or six

Polymorphonuclear leucocytes in influenza.

to fifty or sixty in each leucocyte. Eight of these leucocytes are shown in Figure 1. Many of the leucocytes were vacuolated and the bacteria were apparently in various stages of intracellular digestion. The above work, of course was done under strictest aseptic conditions, and outside contamination was impossible.

February 29: When the patient's blood was examined on this day, smears stained by the same method showed the leucocytes apparently normal in every way, and free from bacteria. At this time the patient was free from symptoms, except a slight mental depression, which disappeared five or six days later.

In a case clinically diagnosed as influenza with slight tonsillar involvement, marked phagocytosis of bacilli and cocci was observed in the circulating blood twelve hours after the cessation of fever.

* From the Pathological Laboratory of Indiana University.

Number.	NAME OF COLLEGE.	1 Alabama.		2 Arizona.		3 Arkansas.		4 California.		5 Connecticut.		6 Delaware.		7 D. of Columbia.		8 Florida.		9 Georgia.		10 Idaho.		11 Illinois.		12 Indiana.		13 Iowa.		14 Kansas.		15 Kentucky.		16 Louisiana.		17 Maine.		18 Maryland.		Massachusetts.		
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA.																																					
1	Birmingham Medical College.—R	10	0					1	0							2	0																					
2	Medical College of Alabama.—R	24	0													2	0																					
	ARKANSAS.																																					
3	Arkansas University Medical Department.—R					1	0									1	0																					
	CALIFORNIA.																																					
4	Cooper Medical College.—R							31	1	1	0																											
5	University of California, Medical Dept.—R							18	1																													
6	California Medical College.—E							1	3																													
7	Hahnemann Medical College of the Pacific.—H							5	0																													
8	College of Physicians and Surgeons.—R			2	0			14	8											2	0																	
9	Oakland College of Medicine and Surgery.—R							4	0																													
10	Univ. of Southern California, Coll. of Med.—R			3	0			20	6																													
11	College of Phys. and Surgeons, Los Angeles.—R							4	0																													
	COLORADO.																																					
12	Denver and Gross College of Medicine—R							0	2													1	0					0	1									
13	Denver Homeopathic College.—H																																					
14	Colorado School of Medicine, Boulder.—R																			2	0																	
	CONNECTICUT.																																					
15	Yale University Medical School.—R									10	0															1	0											
	DISTRICT OF COLUMBIA.																																					
16	George Washington Univ., Dept. of Med.—R									1	0			30	16					1	0			1	0									2	0	8	1	
17	Georgetown Univ., School of Medicine.—R			1	0					1	2			11	7					1	0															1	0	
18	Howard University, Medical Department.—R	1	0					0	1					5	4	1	0	2	0									1	0							2	0	
	GEORGIA.																																					
19	Atlanta College of Phys. and Surgs.—R	4	0	1	0	2	0									3	0	50	2													2	0					
20	Georgia College of Eclectic Med. and Surg.—E	4	0															13	0																			
22	Atlanta School of Medicine.—R					1	0									3	0	29	2																			
21	Medical College of Georgia.—R	0	2													3	0	12	0															2	0			
	ILLINOIS.																																					
23	American Medical Missionary College.—R	1	0					3	0															8	0			2	0					1	0			
24	Bennett Coll. of Eclectic Med. and Surg.—E					1	0	2	1															43	2	2	0	1	0	2	0							
25	College of Medicine and Surgery.—Ph.M																							3	4					1	0							
26	Coll. of Physicians and Surgeons, Chicago.—R					1	0	5	3	1	2			1	0	1	0			3	0	165	6	12	0	9	0			1	0	1	0					
27	Hahnemann Medical College and Hospital.—H							1	0													49	5	4	0	1	1	3	1									
28	Hering Medical College.—H	1	0					2	1													8	3			1	0											
29	Illinois Medical College.—R	1	0					1	6													19	1	9	1	1	0											
30	Jenner Medical College.—R																					30	5															
31	Northwestern University Medical School.—R					1	0	8	0											2	0	106	1	4	0	2	0											
32	Rush Medical College.—R			1	0			0	7	0										7	1	73	0	8	0	2	0	2	0									
33	National Medical University	1	0																			13	0															
34	American College of Medicine and Surgery.—E					0	1	1	1													22	1	1	0													
35	Dearborn Medical College, Chicago.—R																					30	5															
	INDIANA.																																					
36	Indiana Medical College.—R			1	0	0	2															6	0	113	8													
37	Physio-Medical College of Indiana.—Ph.M																							6	0													
38	Eclectic Medical College of Indiana.—E																							5	1													
	IOWA.																																					
39	Drake University, College of Medicine.—R			1	0			1	0																	9	0											
40	Keokuk Med. Coll., Coll. of Phys. and Surg.—R					2	0	0	1											0	1	1	2			43	18	3	0									
41	Sioux City College of Medicine.—R			1	0																					12	4											
42	State Univ. of Iowa, Homeopathic Dept.—H																																					
43	State Univ. of Iowa, Coll. of Medicine.—R							2	0											1	1	1	0			58	0											
	KANSAS.																																					
44	Kansas Medical College.—R			1	0			1	0																			17	0									
45	University of Kansas, School of Medicine.—R							1	0																			49	0									
	KENTUCKY.																																					
46	Hospital College of Medicine.—R	2	0	0	1	2	1	1	0															6	0			0	3	4	2	2	2	1	0			
47	Kentucky School of Medicine.—R	2	1			1	0	1	0							1	0	1	0	0	1	1	0	5	0			1	0	7	2	1	1	0	1			
48	Louisville Medical College.—R	2	0			3	0											1	0					7	0			2	0	2	0	1	0					
49	Louisville National Medical College.—H																																					
50	Southwestern Homeopathic Medical College.—H																							1	1													
51	University of Louisville, Medical Dept.—R	1	1			2	1	0	1					0	1	2	0			0	1	1	1	5	0	1	0	2	0	9	2	2	0					
52	Kentucky University Medical Department.—R	2	0	1	0	1	0									1	0	2	0					4	0			1	0	3	1	1	0					
	LOUISIANA.																																					
53	Flint Medical College.—R					1	0																									9	6					
54	Tulane University, Medical Department.—R	10	1	1	0	3	0	1	0	1	0					3	0	1	0	1	0											63	0					
	MAINE.																																					
55	Medical School of Maine, Bowdoin College.—R									1	0																							16	0			
	MARYLAND																																					
56	Baltimore Medical College.—R									5	4	2	1	3	0			1	0	1	0	2	0	1	0									2	2	17	8	
57	Baltimore University, School of Medicine.—R					1	0															1	0	1	0									0	1	2	1	
58	College of Phys. and Surgs. of Baltimore.—R	1	0	1	0					5	2							0	1	0						1	0									9	4	
59	Johns Hopkins Medical School.—R	1	0	1	0			2	0	2	0					1	0							1	0											19	0	
60	Southern Homeopathic Medical College.—H													1	2																							
61	University of Maryland, School of Med.—R	1	0			1	0			3	0					4	0							1	0			1	0			2	0	2	0	44	0	
62	Woman's Medical College of Baltimore.—R									0	1																											
63	Maryland Medical College.—R	0	1							1	1	1	0	0	1	2	0	8	0													1	0			5	12	
	MASSACHUSETTS.																																					
64	Boston University, School of Medicine.—H									3	0			1	0							1	0											4	0			
65	College of Physicians and Surgeons.—R									1	2																							7	3			
66	Harvard University Medical School.—R	1	0	2	0			6	0	4	0											2	0	1	0	1	0			1	0			5	1			
67	Tufts College Medical School.—R									1	2															1	0	1	0					10	0			
	MICHIGAN.																																					
68	Detroit College of Medicine.—R			0	1			1	0											2	0	2	0															
69	Detroit Homeopathic Medical College.—H																																					
70	Michigan College of Medicine and Surgery.—R																					1	0															
71	Grand Rapids Medical College.—R																																					
72	Univ. of Michigan, Dept. of Med. and Surg.—R	1	0	2	0			2	1					0	1	1	0			1	0	1	0	2	0	1	0							2	0			
73	Univ. of Michigan, Homeopathic Dept.—H							1	0																													
	MINNESOTA.																																					
74	Univ. of Minnesota, Coll of Med. and Surg.—R									1	0									3	0																	
75	Univ. of Minnesota, Homeopathic Dept.—H																																					
76	Minnesota College of Phys. and Surgs.—R																																					
	MISSISSIPPI.																																					
77	Mississippi Medical College.—R																																					
		1		2		3		4		5		6		7		8		9.		10		11		12		13		14		15		16		17		18		19	

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						
Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	Totals.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
																										13	13	0	0.	3	1
2 0																										29	29	0	0.	3	2
											1 0							0 1								10	9	1	10.0	4	3
							2 0					3 0										2 0				40	39	1	2.5	5	4
							0 1															1 0				21	19	2	9.5	3	5
																						1 0				5	2	3	60.0	2	6
		0 1																								6	5	1	16.7	2	7
																			2 0			2 1				26	22	4	15.4	5	8
																										4	4	0	0.	1	9
												1 0										2 0				32	26	6	18.7	4	10
																										4	4	0	0.	1	11
											0 1	1 2				1 0			1 1			3 1			3 0	18	10	8	44.4	9	12
												0 1														1	0	1	100.0	1	13
										1 0								1 0	1 0			1 0				6	6	0	0.	5	14
						1 0	4 0							4 0								1 0				24	24	0	0.	7	15
		1 0				2 0		3 1		2 0			2 1				1 0	1 0			4 0		2 0			80	61	19	23.7	15	16
						2 0	2 0	2 0			1 0	1 0	2 0	1 0								1 0				37	28	9	24.	15	17
						1 0	0 1	1 0		1 0			5 1		1 0						3 1	3 1				37	28	9	24.3	16	18
								1 1			1 0				1 0	1 0	3 0	0 1								73	69	4	5.7	12	19
															1 3		1 1									19	18	1	5.3	3	20
2 0																										39	34	5	12.8	4	21
																										21	19	2	9.5	5	22
		1 0	1 0							1 0		1 1	1 1				1 0					3 0		1 0		29	27	2	6.9	15	23
			1 0									1 1	2 0			0 1						1 2				72	65	7	9.7	13	24
0 1																										9	4	5	55.5	3	25
1 0	3 0	4 1	1 0				1 0	6 0		2 0	3 2	3 2	1 0			5 2	1 0	2 1	6 1			8 2		5 0		273	251	22	8.0	27	26
1	1	0 1				1 0	1 2	1 0		0 1	1 0	1 0							1 0			2 1		1 0		84	71	13	15.5	18	27
							1 0	1 1				1 0										2 1				18	12	6	3.3	8	28
1		1 0			1 0		0 1	1 0	0 1	1 0			1 0				1 0	0 1				1 0		1 0		46	39	7	15.2	17	29
													1 0					1 0								37	32	5	13.5	3	30
1 0	1 0	0 1	1 0				2 0	2 0		3 0	2 2	2 1	8 0			1 0			1 0			7 1		3 1		166	159	7	4.2	20	31
1	5 0	2 0					1 1	3 0	3 0	2 2	8 1			1 0		3 0		4 0	2 0			12 1	0	5 0		165	158	7	4.2	24	32
								0 1																		16	14	2	12.5	4	33
	1 0												2 0			2 1							1 0			34	30	4	11.8	8	34
																		1 1								37	31	6	16.2	2	35
		0 1	0 1				1 0			1 0	1 0	1 0				0 1		0 1	1 0			3 1				142	127	15	10.6	13	36
	0 1										0 1															8	6	2	25.0	3	37
																										6	5	1	16.7	1	38
																							1 0		1 0	13	13	0	0.	5	39
	0 4		1 0						1 0		5 0					0 1					2 0				85	58	27	31.8	12	40
									2 0																	19	15	4	21.1	3	41
	1 0											1 0														1	1	0	0.	1	42
										1 0	1 0	2 0				1 0	1 0					4 1				75	73	2	2.7	11	43
			1 0								4 1								0 1			0 1				20	19	1	5.0	4	44
																										65	53	2	3.1	5	45
1 2								0 1			3 0				1 0		4 1	0 1	1 0		0 2	1 0	2 1			48	31	17	35.4	19	46
0 1	1 0	0 1									2 1		0	2 1	2			1 1				1 0	0 7			51	28	23	45.1	22	47
5 3	0 1	0 1									1 1		1	1			2 0	6 1				0 1	2 4			48	35	13	27.1	16	48
																															49
0 1	2 1						1 0	0 1			6 4		2 0		1 0		4 0	2 0		2 0	0 2	1 2	1 3			4	1	3	75.0	2	50
2 1					0 2	0 1	1 0	1 1		3 0	1 0		1	2			1 1		1 0		2 1		2 6			67	47	20	29.8	24	51
																										48	32	16	33.3	21	52
1 7																										24	11	13	54.2	3	53
5 4									1 0		2 0	2 1					2 0	12 0				1 0				115	109	6	5.2	16	54
					1 0						1 0			2 0								0 1				28	27	1	3.6	7	55
			1 0		6 0	7 2	13 0	3 0		2 0			19	4 3	1			2 0			3 4		3 1			152	111	41	27.0	22	56
						0 1	0 1						1	2 2	2				0 1				2 3			38	12	26	68.4	13	57
1 0		1 1				5 2	3 1	4 1		1 0			14	1 5	0		1 0				1 0	0 1	9 0			84	69	15	17.8	20	58
	1 0	1 0				1 0	12 1	2 0	1 0	1 0		0 2	9	0 2	0		1 0	1 0			4 0	0 1	0	2 0		77	76	1	1.	25	59
													1	0												6	2	4	66.7	3	60
		0 1			0 1	0 1	2 0	5 4	1 0	1 1	1 0		6	2	3	0		1 0			4 1		5 0			109	89	20	10.1	23	61
								0 1			1 0		2	1 0	2	0 4		0 1	2 0		0 2	0 1	1 0			2	1	1	50.0	2	62
		1 0			0 1						1 0			1 0	2	0	0 1	2 0			0 2	0 1	4 6			69	30	39	56.5	21	63
					2 0	1 3	5 0				1 0		1	0 2	0											51	44	7	13.7	14	64
					1 0		1 1							1 2												32	20	12	37.5	7	65
			1 0		4 1	1 0	18 0					2 0	1	0 10	0			1 0					1 0			121	118	3	2.5	21	66
	2 0				2 0		3 0						1	0 4	0							1 0				88	83	5	5.7	11	67
									3 1			0 2										0 1		2 0		87	81	6	6.9	9	68
									1 0		1 0	1 0														8	7	1	12.5	1	69
																					1 0					14	14	0	0.	6	70
		3 0	1 0			1 0	8 0		1 0	5 0		2 1	3	0		1 0	1 0	1 0		2 0		1 0	5 2		0 1	8	8	0	0.	4	71
							1 0				1 0	0 1					2 0							1 0		97	91	6	6.2	26	72
																										19	18	1	5.3	7	73
		1 0							8 0			2 0										5 1		1 0		74	65	9	12.2	8	74
							1 0									0 1										2	2	0	0.	2	75
									8 1																	45	32	13	28.7	3	76
																															77
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						

Number.	NAME OF COLLEGE.	1 Alabama.		2 Arizona.		3 Arkansas.		4 California.		5 Connecticut.		6 Delaware.		7 D. of Columbia.		8 Florida.		9 Georgia.		10 Idaho.		11 Illinois.		12 Indiana.		13 Iowa.		14 Kansas.		15 Kentucky.		16 Louisiana.		17 Maine.		18 Maryland.		19 Massachusetts.		20 Michigan.	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	MISSOURI.																																						
78	University Medical College, Kansas City.—R.																				0							29	2								0	1		
79	Kansas City Hahnemann Medical College.—H.																				1							5	0										
80	Eclectic Medical University.—E.																											4	2										
81	Ensworth Central Medical College.—R.					1	0																			0	1	23	9										
82	Barnes Medical College.—R.	1	0	2	0	2	0									3	1			0	1	23	12					6	4	1	1								
83	St. Louis University, Medical Department.—R.					5	0	1	1									7	0	1	0	63	0	2	0			5	0	1	0								
84	St. Louis Coll. of Physicians and Surgeons.—R.			0	1	2	0									1	0			1	0	17	12	1	0	1	3			1	0	2	0						
85	American Medical College.—E.			1	0	1	0	0	1											1	0	1	0																
86	Homeopathic Medical College of Missouri.—H.																					1	0					1	1					1	0				
87	Washington University, Med. Department.—R.					2	0	1	0													29	0			1	0	1	0			1	0						
88	University of Missouri, Dept. of Medicine.—R.							0	1																			1	0										
	NEBRASKA.																																						
89	University of Nebraska, College of Medicine.—R.																											1	0										
90	John A. Creighton Medical College.—R.																			1	0	1	0			8	0												
91	Lincoln Medical College.—E.					0	1																					5	1										
92	Nebraska College of Medicine.—R.																																						
	NEW HAMPSHIRE.																																						
93	Dartmouth Medical College.—R.			1	0			1	0		0																									0	1		
	NEW YORK.																																						
94	Albany Medical College.—R.									1																								1	0		1		
95	College of Physicians and Surgeons.—R.			1	0			1	0	2								1	0					1	0					1	0			3	0		0		
96	Cornell University Medical College.—R.																							1	0												1		
97	Eclectic Med. Coll. of City of New York.—E.																																				0		
98	Long Island College Hospital.—R.			1	0					1																								0	1	1	0		
99	New York Homeo. Med. Coll. and Hosp.—H.					1	0							1																1	0				1	0		
100	N. Y. Med. Coll. and Hosp. for Women.—R.																																			1	0		
101	University and Bellevue Hosp. Medical Coll.—R.	1	0			1	0	5	0		1					1	0					1		1	0	1	0							1	0		1	0	
102	Syracuse University, College of Medicine.—R.																																						
103	University of Buffalo, Medical Department.—R.									1	0																												
	NORTH CAROLINA.																																						
104	Leonard School of Medicine.—R.					1	0											6	0															1	1	1	1		
105	North Carolina Medical College.—R.																	1	0																				
106	University of North Carolina, Medical Dept.—R.																																						
	OHIO.																																						
107	Western Reserve Univ., Medical Dept.—R.																																						
108	Cleveland College of Phys. and Surgs.—R.																																						
109	Cleveland Homeopathic Medical College.—H.			1	0																							1	0										
110	Eclectic Medical Institute.—E.																					3	1	9	1			2	0	2	1						1	0	
111	Medical College of Ohio.—R.			1	0	1	0	3	1							2	0					1	0	2	0					5	0								
112	Pulte Medical College.—H.							1	0																														
113	Miami Medical College.—R.							1	0													2	0	1	0														
114	Ohio Medical University.—R.																					1	0	1	0							1	0						
115	Starling Medical College.—R.							0	1																														
116	Toledo Medical College.—R.																					4	0	1	0														
	OKLAHOMA.																																						
117	Epworth University College of Medicine.—R.																																						
	OREGON.																																						
118	University of Oregon, Medical Department.—R.																			1	0																		
119	Willamette University, Medical Department.—R.																			1	0																		
	PENNSYLVANIA.																																						
120	Temple College of Medicine.—R.													1	0																								
121	Univ. of Pennsylvania, Dept. of Medicine.—R.	1	0					5	0	1	0	3	0	1	0	2	0	1	0			3	0	1	0					2	0	1	0	1	0	2	0	6	0
122	Hahnemann Medical College and Hospital.—H.	1	0					2	0	1	0			5	0																					2	0		
123	Jefferson Medical College, Philadelphia.—R.							3	1	4	1	2	0	1	0	2	0	2	0	0	1	3	0	1	0	2	0							4	0	2	4	2	0
124	Woman's Medical College of Pennsylvania.—R.	1	0					1	0					1	0													1	0					1	0		7	0	
125	Medico-Chirurgical College of Philadelphia.—R.							1	1			2	0			2	0							1	0					1	0			2	0		1	0	
126	Western Pennsylvania Medical College.—R.																			1	0																		
	SOUTH CAROLINA.																																						
127	Med. Coll. of the State of South Carolina.—R.			0	1											1	0																						
	TENNESSEE.																																						
128	Tennessee Medical College.—R.																	1	0																				
129	Knoxville Medical College.—R.																																						
130	University of Nashville, Medical Dept.—R.	13	0			2	0									1	0	2	0									1	0	1	1	4	0						
131	Vanderbilt University, Medical Department.—R.	2	0	1	0	3	0									1	0	4	0	1	0									2	0	4	0						
132	Univ. of Tennessee, Medical Department.—R.		1			1	0	0	1									1	0											2	3								
133	Meharry Medical College.—R.	7				2	6									4	4	11	0			1	0			1	1	4	1	2	0	3	1				0	1	
134	Memphis Hospital Medical College.—R.	4	0			3	1											1	0													22	0						
135	University of the South, Medical Dept.—R.	4	0	1	0					1	2					1	1	3	0													1	0			0	1	1	2
136	Chattanooga Medical College.—R.	11	2															6	1																				
137	University of West Tennessee, Med. Dept.—R.					0	1																																
138	College of Physicians and Surgeons.—R.																																						
	TEXAS.																																						
139	Fort Worth University, Medical Dept.—R.															1	0																						
140	University of Texas, Dept. of Medicine.—R.					1	0																									1	0						
141	Baylor University, College of Medicine.—R.																															2	1						
142	Physio-Medical College of Texas.—R.																																						
143	Gate City Medical College, Texarkana.—R.																																						
144	Southwestern University Med. Coll., Dallas.—R.																																						
145	College of Physicians and Surgeons, Dallas.—R.					1	0																									1	1						
	VERMONT.																																						
146	University of Vermont, Medical Dept.—R.							1	0											1	0													2	0		7	1	
	VIRGINIA.																																						
147	Medical College of Virginia.—R.			2	0											1	0																						
148	University College of Medicine.—R.																																						
149	University of Virginia, Dept. of Medicine.—R.	3	0			1	0	1	0					2	1	1	0																			1	0	1	0
	WISCONSIN.																																						
150	Milwaukee Medical College.—R.															1	0			1	0																		
151	Wisconsin College of Phys. and Surgs.—R.																							1	0														
152	Canadian Colleges			1	0			3	1	2	0					2	0			1	0	4	0	1	0	3	1	0	1			1	0	9	0		7	8	1
153	Foreign			1	0	2	0	5	2	16	5					3	1					3	0	1	0	2	0									1	0	2	1
154	Miscellaneous Medical Colleges	3	1	1	0	7	0	6	7					0	1	2	0	1	0	1	4	2	2	2	0			2	1			0	1	1	0			1	0	
155	Undergraduates	12	9			78	59																															31	56
	Totals by States	160		39		225		234		112		12		97		73		169		54		817		240		195		207		65		147		88		156		390	
	Totals—Examined—Passed	138		35		152		190		84		11		63		66		164		42		748		228		166		180		52		133		80		112		270	
	Totals—Examined—Failed	22		4		7		44		28		1		34		7		5		12		69		12		29		27		13		14		8		44		120	
	Percentage of Failures	13.7		10.3		32.4		19.9		25.0		8.3		35.0		9.6		2.9		22.2		8.4		5.0		14.9		13.0		20.0		9.5		9.1		28.2		30.8	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20	

	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						
	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	Totals.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
		16 2											6 1						1 0		1 0						59	53	6	10.2	7	78
				0 1									1 0														8	6	2	25.0	4	79
		2 7																									16	7	9	56.2	3	80
		5 15		1 3							2 0	0 1							1 0								61	33	28	45.9	8	81
1	1 12	21 30	0 1	1 1							3 2	0 2	1 0				0 1		1 0			5 1	1 3				136	74	62	45.5	21	82
	1 0	57 39	2 2	1 1				1 0		0 1	5 2	0 1							0 2	3 2		2 0	3 1			1 0	21	155	58	27.2	21	83
		9 26											1 1						1 1						1 0		82	38	44	53.6	13	84
		6 3		1 0																							16	11	4	26.7	7	85
		0 1																									5	3	2	40.0	4	86
		57 5							2 0		4 0	0 1							1 0		1 0	3 0					89	83	6	6.7	13	87
		7 0						1 0			1 0																12	11	1	8.3	6	88
			7 7						1 0							1 0															
		0 0	27 10													3 0				1 0					1 0		20	12	8	40.0	6	89
			7 0									0 1				2 1						0 1					55	42	13	23.6	8	90
																											19	14	5	26.3	6	91
																																92
					8 2		9 0													1 0							25	21	4	19.0	3	93
							8				1 0									1 0											
							14	2 0		2 0		3 0	7 0	6 0							1 0	2 1	1 0		1 0		42	40	2	4.8	7	94
						1 0	58						1 0	1 0								1 0	2 1	1 0			193	185	8	4.1	20	95
							13						1 0										1 0	1 0			63	62	1	1.6	9	96
						4 0	58 2						2 0				1 0								1 0		17	15	2	11.8	4	97
							28 1				0 1		1 0														73	69	4	5.5	9	98
							8 0																				37	35	2	5.4	9	99
																					1 0						9	9	0	0.	1	100
		0 1	1 0			1 0	42 3				1 0		6 0	1 0		1 0	3 0	1 0	2 0		1 0	1 0			1 0		84	79	5	5.9	24	101
							24 1																				25	24	1	4.0	1	102
	1 0						38 2	1 0			1 0	1 0	2 0									1 1					49	46	3	6.1	8	103
	1 1							3 4					3 3		2 1		1 0	0 1			12 12		1 0			56	32	24	42.9	12	104
	1 0							21 6			1 0				1 0						1 0					32	26	6	18.7	6	105
								8 3							1 0						1 0					13	10	3	23.1	3	106
									1 0	20 0													0			24	22	2	8.3	4	107
		0 2					1 0			19 0	1 0								1 1			1 1				26	23	3	11.5	6	108
							1 1			11 0			0 1													18	14	2	12.5	5	109
1	0 1		1 0				3 0			8 1	1 1	1 1	4 0										1			46	36	10	21.7	14	110
		1 1				1 0	1 0			28 0	1 0		1 0									1 0	3			54	52	2	3.7	15	111
							0 1																1			4	2	2	50.0	2	112
										19 1							0 1									31	29	2	6.5	9	113
							1 2		1 0	43 2			1 1										2			56	51	5	8.9	8	114
										25 4			2 2													37	30	7	18.9	6	115
										5 2		0 1														13	10	3	23.1	4	116
																																117
												13 8										6 0				28	20	8	28.6	3	118
												3 15										0 2				21	4	17	81.0	3	119
0		2 0	1 0				9 0	14 1	1 0		2 0	1 0	1 0	12 0												13	13	0	0.	2	120
							3 1	3 0			2 0			43 0							4 0	4 0	3 0		2 0	152	148	4	2.6	28	121
2	1 0 1	0 0	1			1 0	15 2	7 0	12 0		3 0	1 0	2 0	117 12	1 0	2 0	1 1		1 0	3 0	1 0	1 0	2 0	4 0		1 0	63	62	1	1.6	9	122
							5 0	5 0	2 0					16 1					1 0			1 0				231	210	26	11.0	36	123
						1 0	12 0	2 0						78 8												46	42	1	2.3	12	124
										0 1				50 11						2 0					1 0	115	106	9	7.0	13	125
																						1 0				64	52	12	18.7	4	126
							1 0									12 1										18	15	3	16.7	6	127
								0 5										13 4								24	14	10	41.7	4	128
	8 5 0 1							0 1								0 1						0 1				3	1	2	66.7	2	129
	1 0 3 0							1 0			2 1					6 0	1 0	12 8	0 1							74	56	18	24.3	17	130
	1 2						0 1	1 0			2 0					1 0		5 1	4 2			1 0	1 0			41	36	5	12.2	17	131
	6 10 2 7							0 1								0 1		8 4	5 1			1 1				37	22	15	40.5	11	132
	35 11 0 2							1 1			2 1					2 1		6 7	4 4			1 1	0 1	1 0		111	60	51	45.9	20	133
	2 0 0 2						0 1				3 0							19 1	4 3							105	81	24	22.8	10	134
	1 2							1 1					1 5	0 1	1 0			0 2								42	22	20	47.7	18	135
								2 2			1 1				0 1			15 6	0 1			1 1	1 0	3 2		54	37	17	31.5	10	136
																		0 1				0 1	1 0			2	0	2	100.	2	137
																																138
											2 0							12 0								15	15	0	0.	3	139
											1 0							17 0								20	20	0	0.	4	140
											2 0							8 0								11	10	1	9.1	2	141
																										2	2	0	0.	1	142
																	0 2	2 0								4	2	2	50.0	2	143
																		5 1								6	5	1	16.7	1	144
											1 0							0 4								8	3	5	62.5	4	145
		0 2			4 0	1 0	4 0					0 3	1 0			0 1				29 0		2 0				59	52	7	11.9	13	146
	1 1						2 0	2 1		1 0					3 0						32 2		7 1			56	51	5	8.9	9	147
	1 0	1 0					1 0	5 0													16 1	1 0	6 3			34	30	4	11.8	6	148
						1 0	4 0	2 0				1 0	1 0					1 0	1 0		15 0	2 0	6 0			47	46	1	2.1	19	149
									1 1																						
	2 0 1 0	1 1	1 2	2 1	1 0	0 10	2 0	14 1	0 1	11 1	4 0	2 0	2 2	2 1	3 12		1 0					1 0		11 0		17	15	2	11.8	6	150
	0	4 2	1 1		1 0		1 0	34 18		2 2	3 2		2 0	2 5	3 3		1 0	1 0	0 2	1 0		3 1		13 1		17	15	2	11.8	3	151
	1 2		0 1				6 2	0 2	0 1	1 0	1 2	0 1	2 0					0 1			1 3	6 6	3 0		1 1	153	105	48	31.4	34	152
	51 53	50 41																38 54	18 20				1 28			147	101	46	31.3	28	153
											2 4	0 2		1 5												94	53	41	41.9	31	154
	300	442	49	83	2	51	93	685	128	70	233	123	121	592	84	52	37	246	212	44	35	158	182	156	54	15	8035					155
	156	249	24	58	2	34	80	629	87	60	222	95	65	519	54	39	26	150	150	37	35	123	137	84	52	12		6368				
	144	193	25	25	0	17	13	56	41	10	16	28	56	73	30	13	11	96	53	7	0	35	45	72	2	3		1667				
	48.0	43.7	51.0	30.1	0.	33.3	14.0	8.2	32.0	14.3	6.7	22.7	46.3	12.3	35.7	25.0	29.7	39.0	25.0	15.9	0	22.1	24.7	46.1	3.7	20.0				20.7		
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47							

Number.	NAME OF COLLEGE.	1 Alabama.		2 Arizona.		3 Arkansas.		4 California.		5 Connecticut.		6 Delaware.		7 D. of Columbia.		8 Florida.		9 Georgia.		10 Idaho.		11 Illinois.		12 Indiana.		13 Iowa.		14 Kansas.		15 Kentucky.		16 Louisiana.		17 Maine.		18 Maryland.		19 Massachusetts.	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	ALABAMA.																																				
1	Birmingham Medical College.—R	10	0					1								2	0																				
2	Medical College of Alabama.—R	24	0													2	0																				
	ARKANSAS.																																				
3	Arkansas University Medical Department.—R					5	0									1	0																				
	CALIFORNIA.																																				
4	Cooper Medical College.—R							31	1																												
5	University of California, Medical Dept.—R							18	1																												
6	California Medical College.—E							1	3																												
7	Hahnemann Medical College of the Pacific.—H							5	0																												
8	College of Physicians and Surgeons.—R			2	0			14	3											2	0																
9	Oakland College of Medicine and Surgery.—R							4	0																												
10	Univ. of Southern California, Coll. of Med.—R			2	0			20	6																												
11	College of Phys. and Surgeons, Los Angeles.—R							4	0																												
	COLORADO.																																				
12	Denver and Gross College of Medicine—R							0	1													1	0					0	1								
13	Denver Homeopathic College.—H																																				
14	Colorado School of Medicine, Boulder.—R																			2	0																
	CONNECTICUT.																																				
15	Yale University Medical School.—R									10	0															1	0									2	0
	DISTRICT OF COLUMBIA.																																				
16	George Washington Univ., Dept. of Med.—R									1	0			30	16					1	0			1	0									2	0	8	1
17	Georgetown Univ., School of Medicine.—R			1	0					1	2			11	7					1	0															1	0
18	Howard University, Medical Department.—R	1	0											5	4	1	0	2	0									1	0							2	0
	GEORGIA.																																				
19	Atlanta College of Phys. and Surgs.—R	4	0	1	0	2	0									2	0	49	2															2	0		
20	Georgia College of Eclectic Med. and Surg.—E	4	0															13	0																		
21	Medical College of Georgia.—R	0	1													2	0	29	2																		
22	Atlanta School of Medicine.—R															3	0	12	0															2	0		
	ILLINOIS.																																				
23	American Medical Missionary College.—R	1	0					1	0													8	0			1	0							1	0		
24	Bennett Coll. of Eclectic Med. and Surg.—E							1	1													43	2	2	0	1	0	2	0								
25	College of Medicine and Surgery.—Ph.M																					3	4					1	0								
26	Coll. of Physicians and Surgeons, Chicago.—R					1	0	3	1	1	2			1	0	1	0			3	0	165	6	12	0	8	0			1	0						
27	Hahnemann Medical College and Hospital.—H							1	0													49	5	2	0	0	1	2	0								
28	Hering Medical College.—H							1	1													3	3			1	0										
29	Illinois Medical College.—R	1	0																			19	1	9	1	1	0							1	1		
30	Jenner Medical College.—R																					30	5														
31	Northwestern University Medical School.—R							7	0											2	0	105	1	4	0	1	0										
32	Rush Medical College.—R							4	0											4	0	70	0	7	0	2	0	2	0							1	0
33	National Medical University																					13	0													0	1
34	American College of Medicine and Surgery.—E					0	1	1	1													22	1	1	0												
35	Dearborn Medical College, Chicago.—R																					30	5														
	INDIANA.																																				
36	Indiana Medical College.—R			1	0																	5	0	112	8												
37	Physio-Medical College of Indiana.—Ph.M																							6	0												
38	Eclectic Medical College of Indiana.—E																							5	1												
	IOWA.																																				
39	Drake University, College of Medicine.—R			1	0			1	0																	9	0										
40	Keokuk Med. Coll., Coll. of Phys. and Surg.—R																			0	1	0	2			43	18	1	0								
41	Sioux City College of Medicine.—R																									12	4										
42	State Univ. of Iowa, Homeopathic Dept.—H																																				
43	State Univ. of Iowa, Coll. of Medicine.—R							1	0													1	0			58	0										
	KANSAS.																																				
44	Kansas Medical College.—R																											17	0								
45	University of Kansas, School of Medicine.—R																											19	0								
	KENTUCKY.																																				
46	Hospital College of Medicine.—R	2	0			1	0																	6	0					4	2	2	1				
47	Kentucky School of Medicine.—R	2	1					1	0													1	0	4	0					7	1	1	0	0	1	1	2
48	Louisville Medical College.—R	2	0			1	0											1	0					7	0			1	0	2	0	1	0				
49	Louisville National Medical College.—H																																				
50	Southwestern Homeopathic Medical College.—H																							1	1												
51	University of Louisville, Medical Dept.—R	1	1			1	0	0	1							1	0					0	1	5	0	1	0	2	0	9	2	2	0				
52	Kentucky University Medical Department.—R	2	0	1	0	1	0									1	0	2	0					4	0			1	0	3	1	1	0				
	LOUISIANA.																																				
5	Flint Medical College.—R					1	0																									9	6				
54	Tulane University, Medical Department.—R	9	1	1	0	2	0			1	0					2	0	1	0	1	0											63	0				
	MAINE.																																				
55	Medical School of Maine, Bowdoin College.—R																																	16	0		
	MARYLAND.																																				
56	Baltimore Medical College.—R									5	4	2	1	3	0							2	0	1	0									2	2	17	8
57	Baltimore University, School of Medicine.—R					1	0															1	0									0	1	1	1	0	3
58	College of Phys. and Surgs. of Baltimore.—R	1	0							5	2					2	0	1	0							1	0								9	4
59	Johns Hopkins Medical School.—R	1	0	1	0			2	0	2	0													1	0									1	0	18	0
60	Southern Homeopathic Medical College.—H													1	2																						
61	University of Maryland, School of Med.—R	1	0			1	0			3	0					1	0							1	0			1	0			1	0	2	0	44	9
62	Woman's Medical College of Baltimore.—R																																				
63	Maryland Medical College.—R	0	1							1	0	1	0	0	1	2	0	8	0													1	0			5	12
	MASSACHUSETTS.																																				
64	Boston University, School of Medicine.—H									3	0											1	0											2	0		
65	College of Physicians and Surgeons.—R									1	2																	1	0					6		8	4
66	Harvard University Medical School.—R							2	0	1	0											2	0											5	1	53	1
67	Tufts College Medical School.—R									1	2															1	0							10	0	57	8
	MICHIGAN.																																				
68	Detroit College of Medicine.—R																			1	0	2	0														
69	Detroit Homeopathic Medical College.—H																																				
70	Michigan College of Medicine and Surgery.—R																																				
71	Grand Rapids Medical College.—R																																				
72	Univ. of Michigan, Dept. of Med. and Surg.—R	1	0	1	0			1	0							1	0			1	0	1	0	2	0	1	0							1	0	2	0
73	Univ. of Michigan, Homeopathic Dept.—H							1	0																												
	MINNESOTA.																																				
74	Univ. of Minnesota, Coll of Med. and Surg.—R									1	0									3	0															1	0
75	Univ. of Minnesota, Homeopathic Dept.—H																																				
76	Minnesota College of Phys. and Surgs.—R																																				
	MISSISSIPPI.																																				
77	Mississippi Medical College.—R																																				
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19	

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Totals.	Examined — Passed.	Examined — Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.						
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
																										13	13	0	0.	2	1
																										28	28	0	0.	3	2
											1 0							0 1									8	7	1	12.5	4	3
												2 0															34	33	1	5.9	2	4
							0 1															1 0					21	19	2	9.5	3	5
																											4	1	3	75.0	1	6
																											5	5	0	0.	1	7
																			2 0			2 1					26	22	4	15.4	5	8
																											4	4	0	0.	1	9
																						1 0					29	23	6	23.3	3	10
																											4	4	0	0.	1	11
											0 1	1 1					1 0		1 0			2 0			3 0		13	9	4	30.8	9	12
												0 1															1	0	1	100.0	1	13
																		1 0	1 0								4	4	0	0.	3	14
							3 0							3 0								1 0					21	21	0	0.	6	15
		1 0				2 0	2 0	2 1		2 0			2 1				1 0				4 0		2 0				76	57	19	25.0	13	16
						1 0	0 1	1 0		1 0			5 1		1 0						3 1	2 0					36	27	9	25.0	13	17
																											34	27	7	20.6	15	18
															1 0	1 0	1 0	0 1									65	62	3	4.6	9	19
																	1 1										19	18	1	5.3	3	20
															1 0												37	32	5	13.5	3	21
2 0																											20	19	1	5.0	5	22
		1 0	1 0							1 0	1 0	1 0	1 1									2 0		1 0			23	22	1	4.4	14	23
			1 0								1 0	1 1	2 0			0 1						0 1					67	61	6	8.9	11	24
0 1																											9	4	5	55.5	3	25
	3 0	4 1	1 0						5 0		2 0	2 2	1 0			5 2	1 0	2 1	5 0			7 1		5 0		259	242	17	6.6	24	26
	1 0	0 1																	1 0		2 0	1 0		1 0		69	62	7	10.1	13	27
							1 0		1 1													1 1				14	8	6	42.8	6	28
					1 0				1 0	0 1	0 1		1 0				1 0	0 1				1 0		1 0		43	37	6	14.0	14	29
	1 0	0 1	1 0				2 0		2 0		3 0	2 1	3 0			1 0		1 0				7 0		3 0		157	154	3	1.9	18	31
1 0	4 0	1 0					1 1		2 0	3 0		6 1		1 0		3 0		4 0	2 0			9 0		5 0		135	132	3	2.2	20	32
0 1									0 1									1 1								15	13	2	13.3	3	33
	1 0												2 0			2 1							1 0			34	30	4	11.8	8	34
																		1 1								37	31	6	16.2	5	35
		0 1	0 1				1 0			1 0	1 0					0 1		0 1	1 0			2 0				136	124	12	8.8	12	36
																										6	6	0	0.	1	37
																										6	5	1	16.7	1	38
	0 4		1 0							3 0												1 0	1 0			12	12	0	0.	4	39
									1 0																	74	49	25	33.8	8	40
																										17	13	4	23.5	2	41
										1 0						1 0	1 0					1 0				64	64	0	0.	7	42 43
	8 0		1 0								4 1								0 1							17	17	0	0.	1	44
1 2								0 1			2 0				1 0		4 1	0 1			0 2	1 0	2 1			64	62	2	3.1	5	45
0 1													0 2	1 2				1 0					0 7			37	26	11	29.7	14	46
5 3		0 1									1 0		1 1				2 0	6 1				0 1	2 4			37	20	17	45.9	14	47
																										43	32	11	25.6	15	48
																					0 2										49
	1 0										4 0		2 0		1 0		3 0	1 0		2 0		1 0	1 3			4	1	3	75.0	2	50
2 1					0 2	0 1	1 0	1 1		3 0	1 0		1 2				1 1		1 0		2 1		2 6			46	38	8	17.4	19	51
1 7																										47	31	16	34.0	21	52
5											2 0	2 0					2 0	12 0				1 0				24	11	13	54.2	3	53
					1 0																					108	104	4	3.7	14	54
																										21	21	0	0.	3	55
			1 0		6 0	6 3	12 0	3 0		2 0			19 3	3 1				2 0			2 3		2 1			144	105	39	27.0	20	56
						0 1							1 2	2 2					0 1				2 3			35	10	25	71.4	11	57
	1 0					5 2	3 0	4 1		1 0			14 1	5 0							1 0		9 0			77	65	12	15.6	16	58
	1 0	1 0				1 0	12 1	2 0	1 0	1 0		1 0	9 0	2 0			1 0	1 0			4 0	1 0		2 0		75	74	1	1.3	24	59
																										3	1	2	66.7	1	60
	0 1				0 1		1 0	5 4		1 1	1 0		5 2		3 0			1 0			4 1		5 0			101	82	19	18.8	21	61
															1 0											1	1	0	0.	1	62
	1 0				0 1			0 1			1 0		2 1	0 2	0 4			2 0			0 2	0 1	4 6			67	30	37	55.2	20	63
																										39	33	6	15.4	11	64
					1 0	0 3	1 0				1 0		1 0	0 2						1 0							39	18	12	46.9	6	65
			1 0		4 1	1 0	15 0					2 0	1 0	10 0				1 0					1 0			104	101	3	2.9	15	66
	2 0				2 0		1 0						1 0	0 4	0							1 0				85	80	5	5.9	10	67
									3 1															2 0		81	79	2	2.5	5	68
																										7	7	0	0.	1	69
									1 0			1 0									1 0					12	12	0	0.	4	70
																	1 0	1 0								6	6	0	0.	3	71
		3 0	1 0				4 0			5 0		1 0	2 0			1 0	1 0		2 0		1 0	4 1				78	77	1	1.3	22	72
							1 0				1 0													1 0		18	18	0	0.	6	73
		1 0							8 0			1 0										3 1		1 0		70	61	9	12.8	9	74
							1 0																			2	2	0	0.	2	75
									7 1							0 1										4	30	12	30.2	3	76
																															77
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						

Number.	NAME OF COLLEGE.	1 Alabama.		2 Arizona.		3 Arkansas.		4 California.		5 Connecticut.		6 Delaware.		7 D. of Columbia.		8 Florida.		9 Georgia.		10 Idaho.		11 Illinois.		12 Indiana.		13 Iowa.		14 Kansas.		15 Kentucky.		16 Louisiana.		17 Maine.		18 Maryland.		19 Massachusetts.		20 Michigan.		21 Mississippi.	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	MISSOURI.																																									
78	University Medical College, Kansas City.—R.																											28	2												
79	Kansas City Hahnemann Medical College.—H.																											5	0												
80	Eclectic Medical University.—E.																											4	2												
81	Ensworth Central Medical College.—R.																									0	1	23	9												
82	Barnes Medical College.—R.	1	0	2	0											2	0					23	12					6	4	1	1										
83	St. Louis University, Medical Department.—R.					4	0	1	0													61	6	2	0			5	0	1	0										
84	St. Louis Coll. of Physicians and Surgeons.—R.			0	1	2	0									1	0			1	0	17	12			1	3			1	0	1	0								
85	American Medical College.—E.					1	0	0	1											1	0	1	0																		
86	Homeopathic Medical College of Missouri.—H.																					1	0					0	1												
87	Washington University, Med. Department.—R.					1	0	1	0													29	0			1	0	1	0			1	0								
88	University of Missouri, Dept. of Medicine.—R.																											1	0												
	NEBRASKA.																																								
89	University of Nebraska, College of Medicine.—R.																											1	0												
90	John A. Creighton Medical College.—R.																			1	0	1	0			8	0														
91	Lincoln Medical College.—E.																											5	1												
92	Nebraska College of Medicine.—R.																																								
	NEW HAMPSHIRE.																																								
93	Dartmouth Medical College.—R.									1	0																									6	0	1	0			
	NEW YORK.																																								
94	Albany Medical College.—R.									1	0																							1		2	0				
95	College of Physicians and Surgeons.—R.			1	0			1	0	6	2																			1	0					1	0				
96	Cornell University Medical College.—R.									2	0													1	0											1	0				
97	Eclectic Med. Coll. of City of New York.—E.																																			0	2				
98	Long Island College Hospital.—R.			1	0					1	0																							0	1	1	0				
99	New York Homeo. Med. Coll. and Hosp.—H.									1	0																			1	0					1	0	1	0		
100	N. Y. Med. Coll. and Hosp. for Women.—R.																																								
101	University and Bellevue Hosp. Medical Coll.—R.									8	0																							1							
102	Syracuse University, College of Medicine.—R.																																								
103	University of Buffalo, Medical Department.—R.																																								
	NORTH CAROLINA.																																								
104	Leonard School of Medicine.—R.					1	0											6	0															1	0	1	0				
105	North Carolina Medical College.—R.																	1	0																						
106	University of North Carolina, Medical Dept.—R.																																								
	OHIO.																																								
107	Western Reserve Univ., Medical Dept.—R.																																								
108	Cleveland College of Phys. and Surgs.—R.																																								
109	Cleveland Homeopathic Medical College.—H.			1	0																							1	0												
110	Eclectic Medical Institute.—E.																					8	0	8	1			2	0	2	1					1	0				
111	Medical College of Ohio.—R.			1	0			1	0													1	0	2	0					5	0										
112	Pulte Medical College.—H.																																								
113	Miami Medical College.—R.							1	0									1	0			1	0	1	0			1	0	3	0										
114	Ohio Medical University.—R.																							1	0																
115	Starling Medical College.—R.																																								
116	Toledo Medical College.—R.																					4	0	1	0																
	OKLAHOMA.																																								
117	Epworth University College of Medicine.—R.																																								
	OREGON.																																								
118	University of Oregon, Medical Department.—R.																			1	0																				
119	Willamette University, Medical Department.—R.																			1	0																				
	PENNSYLVANIA.																																								
120	Temple College of Medicine.—R.											1	0																												
121	Univ. of Pennsylvania, Dept. of Medicine.—R.	1	0					2	0	1	0	0				2	0	1	0			2	0							2	0			1	0	1	0	5	0		
122	Hahnemann Medical College and Hospital.H.							1	0	1	0			4	0																							2	0		
123	Jefferson Medical College, Philadelphia.—R.							1	0	8	1	2	0	1	0			2	0			8	0	1	0	2	0							3	0	2	4	2	0	1	0
124	Woman's Medical College of Pennsylvania.—R.	1	0					1	0					1	0													1	0					1	0			5	0		
125	Medico-Chirurgical College of Philadelphia.—R.							1	1			2	0			2	0							1	0					1	0			2	0			1	0		
126	Western Pennsylvania Medical College.—R.																																								
	SOUTH CAROLINA.																																								
127	Med. Coll. of the State of South Carolina —R.															1	0																								
	TENNESSEE.																																								
128	Tennessee Medical College.—R.																	1	0																						
129	Knoxville Medical College.—R.																																								
130	University of Nashville, Medical Dept.—R.	12	0			1	0											2	0									1	0	1	1	4	0						
131	Vanderbilt University, Medical Department.—R.	2	0			1	0											3	0	1	0									2	0	4	0						
132	University of Tennessee, Medical Dept.—R.	3	1															1	0											2	3								
133	Meharry Medical College.—R.	6	3			2										4	4	11	0							1	1	4	1	2	0	3	0						
134	Memphis Hospital Medical College.—R.	4	0															1	0													19	0						
135	University of the South, Medical Dept.—R.	4	0	1	0					1	2					1	1	3	0													1	0			0	1	1	0		
136	Chattanooga Medical College.—R.	11	2															5	1																						
137	University of West Tennessee, Med. Dept.—R.					0	1																																		
138	College of Physicians and Surgeons.—R.																																								
	TEXAS.																																								
139	Fort Worth University, Medical Dept.—R.															1	0																								
140	University of Texas, Dept. of Medicine.—R.							1	0																																
141	Baylor University, College of Medicine.—R.																															2	1								
142	Physio-Medical College of Texas.—R.																																								
143	Gate City Medical College, Texarkana.—R.																																								
144	Southwestern University Med. Coll., Dallas.—R.																																								
145	College of Physicians and Surgeons, Dallas.—R.							1	0																									1	1						
	VERMONT.																																								
146	University of Vermont, Medical Dept.—R.							1	0																									2	0			7	0		
	VIRGINIA.																																								
147	Medical College of Virginia.—R.			2	0											1	0																								
148	University College of Medicine.—R.																																								
149	University of Virginia, Dept. of Medicine.—R.	2	0			1	0							2	1	1	0													1	0					1	0	1	0		
	WISCONSIN.																																								
150	Milwaukee Medical College.—R.															1	0			1	0																				
151	Wisconsin College of Phys. and Surgs.—R.																							1	0																
152	Canadian Colleges							2	0	2	0					2	0					4	0	1	0	8	1							9	1			7	0	1	0
153	Foreign							3	1	7	1					1	0					1	0	1	0	2	0									1	0	1	1	0	0
154	Miscellaneous Medical Colleges							4	0	1	0									1	0	2	0	2	0									0	1						
	Totals by States	125		22		45		167		87		12		90		49		162		29		797		228		189		191		64		18		78		154		288		10	
	Totals—Examined—Passed	114		21		37		144		67		11		59		44		157		28		781		216		180		170		52		122		70		110		227		10	
	Totals—Examined—Failed	11		1		8		23		20		1		31		5		5		1		66		12		29		21		12		11		8		44		61		1	
	Percentage of Failures	8.8		4.5		19.6		13.7		23.0		8.3		34.4		10.2		3.1		3.4		8.3		5.3		1.5		11.0		18.7		8.8		10.2		28.5		21.2		1.0	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20	

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47					
	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	Totals.	Examined — Passed.	Examined — Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
		15 2										4 0								1 0							52	48	4	7.7	4	78
				0 1								1 0															7	6	1	14.3	3	79
		2 7																	1 0								16	7	9	56.2	3	80
		5 14		1 3								2 0	0 1							1 0							50	32	28	46.7	7	81
1	1 21	29		1 1								2 2	0 1				0 1		1 0				5 1	1 3			125	68	57	45.6	16	82
	57	39	2 1	0 1						0 1		8 2	0 1						0 2	3 2			1 0			1 0	196	141	55	28.0	16	83
		25												1 1					1 0						1 0		77	35	42	54.5	13	84
		8 8		1 0																							14	10	4	28.6	6	85
		0 1																									3	1	2	66.7	3	86
		37 5								2 0		4 0							1 0			1 0					84	79	5	6.0	11	87
		7 0						1 0				1 0															11	11	0	0.	5	88
				7 7						1 0							1 0						1 0				20	12	8	40.0	6	89
			0 1	27 10													3 0			1 0						1 0	53	42	11	20.8	8	90
				7 0									0 1				2 1										17	14	3	17.7	4	91
																																92
						8 2		1 1													1 0						20	17	3	15.0	6	93
								31 1													1 0						37	36	1	2.7	5	94
						1 0		141 5	2 0		1 0		2 0	6 0	5 0								2 0				180	173	7	3.9	15	95
							1 0	53 1						1 0	1 0								1 0	1 0			63	62	1	1.6	9	96
								13 0						1 0													16	14	2	12.5	8	97
							4 0	68 1						2 0													69	67	2	2.9	6	98
								28 1			0 1			1 0													35	33	2	5.7	7	99
								8 0																			8	8	0	0.	1	100
								89						5 0				2 0		2 0						1 0	56	53	3	5.4	7	101
								24 1																			25	24	1	4.0	1	102
								88 2	1 0		1 0	1 0		2 0									1 1				47	44	3	6.4	6	103
1	1								3 4					3 3		2 1		1 0	0 1			12 12					55	31	24	43.6	11	104
1	0								21 6			1 0				1 0						1 0					32	26	6	18.7	6	105
									8 3							1 0						1 0					13	10	3	23.1	3	106
											20 0																20	20	0	0.	1	107
								1 0			19 0	1 0		1 0									1 1				24	23	1	4.2	5	108
								1 0			11 0			0 1													15	14	1	6.7	5	109
		0 1						8 0			8 1		1 1	4 0										1 2			40	33	7	17.5	11	110
			1 0				1 0	1 0			37 0			1 0										0			44	44	0	0.	11	111
																								1 1			2	1	1	50.0	1	112
											19 0																27	27	0	0.	7	113
								1 2		1 0	43 2			1 0										2 0			53	49	4	7.5	6	114
											25 4			2 1										1 0			33	28	5	15.2	3	115
											5 1																11	10	1	9.1	3	116
																																117
													13 8										6 0				28	20	8	28.6	3	118
													3 15										0 2				21	4	17	81.0	3	119
		1 0					3 0	10 0	1 0		2 0	1 0	1 0	12 0								3 0	2 0	3 0		1 0	13	13	0	0.	2	120
0							3 0	8 0			2 0			71 3													129	126	3	2.3	24	121
							3 0	8 0			2 0			43 0													59	59	0	0.	8	122
1	1 0					1 0	15 2	5 0	12 0		3 0	1 0	2 0	116 12	1 0	1 0	1 1		1 0	3 0	1 0	1 0	2 0	4 0			218	197	21	9.6	31	123
							5 0	2 0	1 0					16 1					1 0							37	36	1	2.7	11	124
						1 0	12 0	1 0						77 7						2 0						1 0	112	104	8	7.1	13	125
											0 1			49 11												61	49	12	19.7	2	126
							1 0		0 1							12 1						1 0				17	15	2	11.8	5	127
									0 4									13 4								23	14	9	39.1	4	128
									1 1							0 1						0 1				3	1	2	66.7	2	129
	9 5	0 1										2 1				6 0	1 9	11 8				1 0	1 0			68	52	16	23.5	14	130
		2 0										2 0				1 0		5 0	4 1				1 0			29	28	1	3.4	12	131
	0 2								0 1							0 1		7 4	5 1			1 1				33	19	14	42.4	9	132
	6 10	2 7							1 1			2 0				2 1		6 7	4 4			1 1	0 1	1 0		107	58	49	45.7	19	133
	24 15	0 2										1 0						19 1	4 3							93	72	21	22.6	8	134
	1 0	0 1							0 1					1 5	0 1			0 2				1 1	1 0	3 2		38	19	19	50.0	17	135
	1 2								1 1			1 0				0 1		14 5	0 1				0 1	1 0		48	34	14	29.2	10	136
																		0 1								2	0	2	100.0	2	137
																																138
												1 0							12 0								14	14	0	0.	3	139
												1 0							17 0								19	19	0	0.	3	140
																			8 0								11	10	1	9.1	2	141
												2 0															2	2	0	0.	1	142
																		0 2	2 0								4	2	2	50.0	2	143
																			5 1								6	5	1	16.7	1	144
												1 0							0 4								8	3	5	62.5	4	145
0						4 0		2 0					0 3	1 0							29 0		2 0				51	48	3	5.9	9	146
	1 1							1 0	2 1		1 0					8 0						32 2		7 1		55	50	5	9.1	9	147
			1 0					1 0	5 0									1 0	1 0			16 1	1 0	5 1		31	29	2	6.5	6	148
0	1						1 0	8 0	2 0				1 0	1 0								11 0	1 0	4 0			37	36	1	2.7	18	149
	1									1 1																						
																							1 0		11 0		17	15	2	11.8	6	150
																									13 1		15	14	1	6.7	2	151
2	1 0		1 1	2 1	1 0	0 10	2 0	13 1		9 1	2 0	1 0	2 2	2 1	3 12					0 1		1 0	4 1		8 0		128	86	42	32.8	27	152
		1 0					1 0	12 6		2 2	2 2		1 0	0 2	1 0		1 0			1 0			1 0				58	42	16	27.6	21	153
								1 0					0 1					0 1	1 0			0 3	2 2			24	14	10	41.7	13	154
	123	327	28	80	1	47	81	589	114	57	227	75	91	570	68	50	33	137	133	89	35	142	108	114	51	8	6520	....	....	....	....	....
	66	186	19	56	1	30	70	559	81	48	213	67	50	505	46	37	24	99	106	34	35	108	90	73	50	8	....	5452	....	....	....	....
	57	141	9	25	0	17	11	30	33	9	14	8	41	65	22	13	9	38	27	5	0	34	18	41	1	0	....	....	1068	....	....	....
	46.3	43.1	32.1	31.2	0.	36.2	13.5	50.9	28.9	15.7	6.2	10.6	45.0	11.4	32.3	26.0	27.3	27.7	20.3	12.6	0.	24.6	16.7	35.9	2.0	0.	....	....	....	16.4	....	....
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						

Number.	NAME OF COLLEGE.	1 Alabama.		2 Arizona.		3 Arkansas.		4 California.		5 Connecticut.		6 Delaware.		7 D. of Columbia.		8 Florida.		9 Georgia.		10 Idaho.		11 Illinois.		12 Indiana.		13 Iowa.		14 Kansas.		15 Kentucky.		16 Louisiana.		17 Maine.		18 Maryland.		19 Massachusetts.		
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA.																																					
1	Birmingham Medical College.—R																																					
2	Medical College of Alabama.—R																																					
	ARKANSAS.																																					
3	Arkansas University Medical Department.—R					2	0																															
	CALIFORNIA.																																					
4	Cooper Medical College.—R									1	0																											
5	University of California, Medical Department.—R																																					
6	California Medical College.—E																																					
7	Hahnemann Medical College of the Pacific.—H																																					
8	College of Physicians and Surgeons.—R																																					
9	Oakland College of Medicine and Surgery.—R																																					
10	Univ. of Southern California, Coll. of Medicine.—R			1	0																																	
11	College of Physicians and Surgeons, Los Angeles.—R																																					
	COLORADO.																																					
12	Denver and Gross College of Medicine.—R							0	1																													
13	Denver Homeopathic College.—H																																					
14	Colorado School of Medicine, Boulder.—R																																					
	CONNECTICUT.																																					
15	Yale University Medical School.—R																																					
	DISTRICT OF COLUMBIA.																																					
16	George Washington University, Dept. of Med.—R																																					
17	Georgetown University, School of Medicine.—R																																					
18	Howard University, Medical Department.—R							0	1																													
	GEORGIA.																																					
19	Atlanta College of Physicians and Surgeons.—R															1	0	1	0																			
20	Georgia College of Eclectic Medicine and Surgery.E																																					
21	Medical College of Georgia.—R					1	0									1	0																					
22	Atlanta School of Medicine.—R	0	1																																			
	ILLINOIS.																																					
23	American Medical Missionary College.—R							2	0																	1	0											
24	Bennett Coll. of Eclectic Medicine and Surgery.—E					1	0	1	0																													
25	College of Medicine and Surgery.—Ph.M																																					
26	College of Physicians and Surgeons, Chicago.—R							2	2																	1	0					1	0					
27	Hahnemann Medical College and Hospital.—H																							2	0	1	0	1	1									
28	Hering Medical College.—H	1	0					1	0																													
29	Illinois Medical College.—R							1	0																													
30	Jenner Medical College.—R																																					
31	Northwestern University Medical School.—R					1	0	1	0													1	0			1	0											
32	Rush Medical College.—R			1	0	3	0		0											3	1	3	0	1	0													
33	National Medical University	1	0																																			
34	American College of Medicine and Surgery.—E																																					
35	Dearborn Medical College, Chicago.—R																																					
	INDIANA.																																					
36	Indiana Medical College.—R					0	2															1	0	1	0													
37	Physio-Medical College of Indiana.—Ph.M																																					
38	Eclectic Medical College of Indiana.—E																																					
	IOWA.																																					
39	Drake University, College of Medicine.—R																																					
40	Keokuk Med. College, Coll. of Phys. and Surg.—R					2	0	0	1													1	0					2	0									
41	Sioux City College of Medicine.—R																																					
42	State University of Iowa, Homeopathic Dept.—H																																					
43	State University of Iowa, Coll. of Medicine.—R							1	0													1	1															
	KANSAS.																																					
44	Kansas Medical College.—R			1	0			1	0																													
45	University of Kansas, School of Medicine.—R							1	0																													
	KENTUCKY.																																					
46	Hospital College of Medicine.—R			0	1	1	1	1	0																			0				1	0					
47	Kentucky School of Medicine.—R					1	0									1	0	1	0	0	1			1	0			1	0	0	1	0	1					
48	Louisville Medical College.—R					2	0																					1	0									
49	Louisville National Medical College.—H																																					
50	Southwestern Homeopathic Medical College.—H																																					
51	University of Louisville, Medical Department.—R					1	1							0	1	1	0			0	1	1	0															
52	Kentucky University Medical Department.—R					1	0																															
	LOUISIANA.																																					
53	Flint Medical College.—R																																					
54	Tulane University, Medical Department.—R	1	0			1	0	1	0							1	0																					
	MAINE.																																					
55	Medical School of Maine, Bowdoin College.—R									1	0																											
	MARYLAND.																																					
56	Baltimore Medical College.—R																	1	0	1	0																	
57	Baltimore University, School of Medicine.—R																							1	0									1	0			
58	College of Physicians and Surgs. of Baltimore.—R			1	0											1	0																					
59	Johns Hopkins Medical School.—R															1	0																			1	0	
60	Southern Homeopathic Medical College.—H																																					
61	University of Maryland, School of Medicine.—R															3	0																	1	0			
62	Woman's Medical College of Baltimore.—R																																					
63	Maryland Medical College.—R										0	1																										
	MASSACHUSETTS.																																					
64	Boston University, School of Medicine.—H													1	0																			2	0			
65	College of Physicians and Surgeons.—R																																	1	0			
66	Harvard University Medical School.—R	1	0	2	0			4	0	3	0													1	0	1	0							1	0			
67	Tufts College Medical School.—R																											1	0									
	MICHIGAN.																																					
68	Detroit College of Medicine.—R			0	1			1	0											1	0																	
69	Detroit Homeopathic Medical College.—H																																					
70	Michigan College of Medicine and Surgery.—R																					1	0															
71	Grand Rapids Medical College.—R																																					
72	University of Michigan, Dept. of Med. and Surg.—R			0				1	1					0	1																			1	0			
73	University of Michigan, Homeopathic Dept.—H																																					
	MINNESOTA.																																					
74	Univ. of Minnesota Coll. of Med. and Surg.—R																																					
75	Univ. of Minnesota, Homeopathic Dept.—H																																					
76	Minnesota College of Physicians and Surgeons.—R																																					
	MISSISSIPPI.																																					
77	Mississippi Medical College.—R																																					
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19	

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Totals Examined—	Passed. Examined—	Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.						
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
																															1
1 0																										1	1	0	0.	1	3
																										2	2	0	0.	1	3
							2 0					1 0										2 0				6	6	0	0.	4	4
																															5
		0 1																				1 0				1	1	0	0.	1	6
																										1	0	1	100.0	1	7
																															8
												1 0										1 0				3	3	0	0.	1	9
																															10
												0 1							0 1			1 1				5	1	4	80.0	4	11
																															12
										1 0												1 0				2	2	0	0.	1	13
																															14
						1 0	1 0							1 0												3	3	0	0.	1	15
																															16
						2 0		1 0										1 0								4	4	0	0.	1	17
																						1 0				1	1	0	0.	1	18
																						1 1				3	1	2	66.7	1	19
								1 1									8 0									7	6	1	14.3	4	20
																															21
																										2	2	0	0.	1	22
																										1	0	1	100.0	1	23
												0 1					1 0					1 0				6	5	1	16.7	5	24
																						1 3				5	4	1	20.0	4	25
0 1							1 0			1 0		1 0							1 1			1 1				14	9	5	35.7	9	26
	0 1					1 0	1 2			1 0	0 1	1 0										1 1				15	9	6	40.0	10	27
		1 0					0 1					1 0										1 0				4	4	0	0.	4	28
													1 0													3	2	1	33.3	3	29
																										1	1	0	0.	1	30
									1 0		2 2	2 0										0 1		0 1		9	5	4	44.4	8	31
0	1 0	1 0																				1 1	1 0			36	26	4	13.3	14	32
																										1	1	0	0.	1	33
																															34
																															35
	0 1										0 1											1 1				6	3	3	50.0	4	36
																										2	0	2	100.0	1	37
																															38
									1 0		2 0					0 1									1	1	0	0.	1	39
									1 0													1 0				11	9	2	18.1	8	40
												1 0														1	1	0	0.	1	41
												2 0														1	1	0	0.	1	42
	1 0										1 0															7	6	1	14.3	5	43
																						0 1				3	2	1	33.3	3	44
																						3 0				4	4	0	0.	2	45
											1 0								1 0							10	5	5	50.0	7	46
	0 1										2 1							0 1				1 0				14	8	6	42.8	12	47
	0 1										0 1															5	3	2	40.0	4	48
																															49
																															50
0 1	1 1						1 0	0 1			2 4						1 0	1 0				0 2				21	9	12	57.1	13	51
																										1	1	0	0.	1	52
																															53
0 1									1 0			0 1														7	5	2	28.6	7	54
											1 0			2 0								0 1				7	6	1	14.3	5	55
						1 0	1 0						0 1								1 1		1 0			8	6	2	25.0	7	56
							0 1																			3	2	1	33.3	3	57
1 0		0 1					0 1										1 0					0 1				7	4	3	42.8	7	58
																										2	2	0	0.	2	59
						0 1	1 0		1 0			0 2	1 0													3	1	2	66.7	2	60
													1 0													8	7	1	12.5	6	61
																	0 1														62
																										2	0	2	100.0	2	63
					1 0	1 0	4 0														1 0	1 1				12	11	1	8.3	7	64
					1 0																					2	2	0	0.	2	65
							3 0																			17	17	0	0.	2	66
							2 0																			3	3	0	0.	2	67
																															68
												0 2														6	2	4	66.7	5	69
																										1	0	1	100.0	1	70
											1 0															2	2	0	0.	2	71
																															72
						1 0	4 0		1 0			1 1	1 0				1 0					1 1			0 1	21	16	5	23.8	15	73
												0 1														1	0	1	100.0	1	74
																															75
												1 0										2 0				4	4	0	0.	2	76
									1 0																						77
																										2	2	0	0.	2	78
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						

Number.	NAME OF COLLEGE.	1 Alabama.		2 Arizona.		3 Arkansas.		4 California.		5 Connecticut.		6 Delaware.		7 D. of Columbia.		8 Florida.		9 Georgia.		10 Idaho.		11 Illinois.		12 Indiana.		13 Iowa.		14 Kansas.		15 Kentucky.		16 Louisiana.		17 Maine.		18 Maryland.		19 Massachusetts.		20 Michigan.		21 Minnesota.	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	MISSOURI.																																									
78	University Medical College, Kansas City.—R																			1	0							1	0														
79	Kansas City Hahnemann Medical College.—H																			0	1																						
80	Eclectic Medical University.—E																																									
81	Ensworth Central Medical College.—R					1	0																																		
82	Barnes Medical College.—R					2	0									1	1																										
83	St. Louis University, Medical Department.—R					1	0	0	1									1	0																								
84	St. Louis College of Physicians and Surgeons.—R																																									
85	American Medical College.—E			1	0																											1	0								
86	Homeopathic Medical College of Missouri.—H																																									
87	Washington University, Medical Department.—R					1	0																					1	0					1	0						
88	University of Missouri, Dept. of Medicine.—R							0	1																																
	NEBRASKA.																																								
89	University of Nebraska, College of Medicine.—R																																								
90	John A. Creighton Medical College.—R																																								
91	Lincoln Medical College.—E					0	1																																		
92	Nebraska College of Medicine.—R																																								
	NEW HAMPSHIRE.																																								
93	Dartmouth Medical College.—R			1	0			1	0																													1	0		
	NEW YORK.																																								
94	Albany Medical College.—R																																								
95	College of Physicians and Surgeons.—R																	1	0																	1	0		1				
96	Cornell University Medical College.—R																																			1	0						
97	Eclectic Med. Coll. of City of New York.—E																																									
98	Long Island College Hospital.—R									0	1																																
99	New York Homeopathic Med. Coll. and Hosp.—H					1	0							1	0																												
100	New York Med. Coll. and Hosp. for Women.—R																																										
101	University and Bellevue Hospital Medical Coll.—R	1	0			1	0	5	0	1	1					1	0					1	0																				
102	Syracuse University, College of Medicine.—R																																					1	0				
103	University of Buffalo, Medical Department.—R									1	0																																
	NORTH CAROLINA.																																									
104	Leonard School of Medicine.—R																																									
105	North Carolina Medical College.—R																																										
106	University of North Carolina, Medical Dept.—R																																										
	OHIO.																																									
107	Western Reserve Univ., Medical Dept.—R																																									
108	Cleveland College of Physicians and Surgeons.—R																																										
109	Cleveland Homeopathic Medical College.—H																																									
110	Eclectic Medical Institute.—E																																										
111	Medical College of Ohio.—R					1	0	2	1							2	0																										
112	Pulte Medical College.—H							1	0																																		
113	Miami Medical College.—R																																									
114	Ohio Medical University.—R																																									
115	Starling Medical College.—R							0	1																																		
116	Toledo Medical College.—R																																										
	OKLAHOMA.																																									
117	Epworth University, College of Medicine.—R																																									
	OREGON.																																									
118	University of Oregon, Medical Department.—R																																									
119	Willamette University, Medical Department.—R																																										
	PENNSYLVANIA.																																										
120	Temple College of Medicine.—R																																									
121	University of Pennsylvania, Dept. of Medicine.—R							3	0					1	0																												
122	Hahnemann Medical College and Hospital.—H	1	0					1	0					1	0																												
123	Jefferson Medical College, Philadelphia.—R							2	1	1	0					2	0			0	1															1	0						
124	Woman's Medical College of Pennsylvania.—R																																										
125	Medico-Chirurgical College of Philadelphia.—R																																					1	0				
126	Western Pennsylvania Medical College.—R																			1	0																						
	SOUTH CAROLINA.																																										
127	Medical College of the State of South Carolina.—R			0	1																																						
	TENNESSEE.																																									
128	Tennessee Medical College.—R																																										
129	Knoxville Medical College.—R																																										
130	University of Nashville, Medical Department.—R	1	0			1	0									1	0																										
131	Vanderbilt University, Medical Department.—R			1	0	2	0									1	0	1	0																						
132	University of Tennessee, Medical Department.—R					1	0	0	1																																		
133	Meharry Medical College.—R	1	0																																								
134	Memphis Hospital Medical College.—R					3	0																											3	0								
135	University of the South, Medical Department.—R																																										
136	Chattanooga Medical College.—R																																										
137	University of West Tennessee, Medical Dept.—R																																									
138	College of Physicians and Surgeons.—R																																									
	TEXAS.																																									
139	Fort Worth University, Medical Department.—R																																										
140	University of Texas, Department of Medicine.—R																																									
141	Baylor University, College of Medicine.—R																																									
142	Physio-Medical College of Texas.—R																																									
1	Gate City Medical College, Texarkana.—R																																									
[illegible]	Southwestern University Med. Coll., Dallas.—R																																										
145	College of Physicians and Surgeons, Dallas.—R																																									
	VERMONT.																																									
146	University of Vermont, Medical Department.—R																			1	0																	0	1				
	VIRGINIA.																																										
147	Medical College of Virginia.—R																																									
148	University College of Medicine.—R																																										
149	University of Virginia, Department of Medicine.—R	1	0					1	0																																		
	WISCONSIN.																																										
150	Milwaukee Medical College.—R																																										
151	Wisconsin College of Physicians and Surgeons.—R																																										
142	Canadian Colleges			1	0			1	1											2	0																						
153	Foreign			1	0	1	0	2	1	9	1					2	1					3	0																				
154	Miscellaneous Medical Colleges	3	1	1	0	3	0	5	7	1	0			0	1	2	0			2	4	0	1					2	0							1	0						
	Totals by States	14		16		41		67		22		....		7		24		7		35		90		12		6		16		1		12		10		2		15		0	
	Totals—Examined—Passed	12		13		36		46		18		....		4		22		7		14		17		12		8		10		6		11		10		2		12		2	
	Totals—Examined—Failed	2		3		5		21		4		....		3		2		0		13		8		0		0		6		1		1		0		0		3		1	
	Percentage of Failures	14.3		18.7		12.2		31.3		18.2		....		42.8		8.3		0.		44.0		15.0		0.		0.		37.5		100.0		8.3		0.		0.		20.0		50.0			
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20			

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						
Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	Totals.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
												2 1															7	5	2	28.6	5	78
																											1	0	1	100.0	1	79
		1 1	0 1																													80
			0 1	1 0				1 0				1 0	0 1	1 0						1 0							1	1	0	0.	1	81
		0 1										2 0							0 1			2 0	2 1				11	6	5	45.4	9	82
																											17	14	3	17.7	12	83
																											5	3	2	40.0	4	84
																											1	1	0	0.	1	85
													0 1														2	2	0	0.	2	86
																							3 0				5	4	1	20.0	2	87
																											1	0	1	100.0	1	88
			0 2																													89
																							0 1				2	0	2	100.0	1	90
																											2	0	2	100.0	2	91
																																92
1 0								1 1																			5	4	1	20.0	4	93
0 1			1 0			1 0		2 0			1 0	1 0	1 0	1 0	1 0							1 0	0 1	1 0			5	4	1	20.0	4	94
1 0																											13	12	1	7.7	13	95
								0 1			1 0							1 0						1 0			1	1	0	0.	1	97
																											4	2	2	50.0	4	98
																											2	2	0	0.	2	99
1 0			0 1	1 0			1 0	3 0			1 0			1 0	1 0		1 0	1 0	1 0			1 0	1 0				1	1	0	0.	1	100
		1 0																				1 0					28	26	2	7.1	21	101
																																102
																											2	2	0	0.	2	103
																								1 0			1	1	0	0.	1	104
																																105
																																106
			0 2							1 0									1 1					0 1			4	2	2	50.0	3	107
0 1				1 0				0 1				1 1															2	0	2	100.0	1	108
			0 1								1 0	1 0															1	0	1	100.0	1	109
								0 1														1 0					6	3	3	50.0	5	110
											0 1			0 1				0 1									10	8	2	20.0	7	111
																											2	1	1	50.0	2	112
														0 1													4	2	2	50.0	4	113
														0 1													3	2	1	33.3	3	114
											0 1		0 1						1 0				1 0				4	2	2	50.0	4	115
																											2	0	2	100.0	2	116
																																117
																																118
																																119
0		1 0	1 0				1	4 1						2 0								1 0	2 0			1 0	23	22	1	4.4	15	120
1 1		1 0	0 1				0 1	2 0						1 0		1 0											4	3	1	25.0	4	121
								3 0	1 0					1 1									1 0			1 0	18	13	5	27.8	11	122
								1 0						1 0													6	6	0	0.	4	123
																							1 0				3	2	1	33.3	2	124
																											3	3	0	0.	3	125
									0 1																		1	0	1	100.0	1	126
									0 1																		1	0	1	100.0	1	127
		0						0 1	1 0									1 0	0 1								6	4	2	33.3	6	128
																		0 1	0 1				0 1				12	8	4	33.3	11	129
																		1 0									4	3	1	25.0	4	130
								0 1				0 1															3	2	1	33.3	3	131
									1 0			2 0				1 0											11	9	2	18.1	5	132
									1 1			0 1						1 1									4	3	1	25.0	4	133
																											6	3	3	50.0	4	134
																																135
																																136
												1 0															1	1	0	0.	1	137
																											1	1	0	0.	1	138
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																																144
																																145
			0 2				1 0	2 0								1 0	0 1										8	4	4	50.0	6	146
								1 0																			1	1	0	0.	1	147
								1 0																1 2			3	1	2	66.7	1	148
																						4 0	1 0	2 0			10	10	0	0.	6	149
		1 1																														150
1 0	1 0	1 0	0 1					1 0	0 1	1 0	2 0	1 0															2	1	1	50.0	1	151
1 0		1 0	1 1		1 0			22 12			1 0		1 0	2 3	2			1 0					3 1				24	18	6	25.0	17	152
0 1	1 0		0 1					5 2	0 2		1 0	1 2	1 0	0 1				1 0	0 1			1 0	4 2	3 0		1 1	81	56	25	30.7	20	153
																											67	39	28	41.8	25	154
15	18	20	21	8	1	8	12	96	14	11	11	41	28	22	10	2	4	17	11	5	0	16	71	13	3	7	793	....	....	....	....	....
11	9	11	5	8	1	8	10	70	6	11	9	25	15	14	7	2	2	13	5	3	0	15	47	10	2	4	....	568	....	....	....	....
4	4	9	16	0	0	0	2	26	8	0	2	16	13	8	3	0	2	4	6	2	0	1	24	3	1	3	....	....	225	....	....	....
26.7	30.8	45.0	76.2	0.	0.	0.	16.7	27.1	57.1	0.	18.1	39.1	46.4	36.4	30.0	0.	50.0	23.5	54.5	40.0	0.	6.3	33.8	23.1	33.3	42.8	....	....	....	27.1	....	....
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						

TABLE D.—PHYSICIANS EXAMINED BY

	COLLEGE.	1903		1904		1905		1906		Total Examined.	Passed.	Failed.	Percentage of Failures.	Number.
		P	F	P	F	P	F	P	F					
	ALABAMA.													
1	Birmingham Medical College.—R	1	0	4	0	...	...	13	0	18	18	0	0.	1
2	Medical College of Alabama.—R	6	2	36	5	41	5	29	0	124	112	12	9.7	2
	ARKANSAS.													
3	Arkansas University Medical Department.—R	3	0	2	1	2	1	9	1	19	16	3	15.8	3
	CALIFORNIA.													
4	Cooper Medical College.—R	40	8	44	5	40	9	39	1	186	163	23	12.4	4
5	University of California Medical Department.—R	4	0	34	2	20	2	19	2	83	77	6	7.2	5
6	California Medical College.—E	0	3	3	5	3	5	2	3	24	8	16	66.7	6
7	Hahnemann Medical College of the Pacific.—H	9	3	7	1	10	5	5	1	41	31	10	24.4	7
8	College of Physicians and Surgeons, San Francisco.—R	20	9	18	12	17	14	22	4	116	77	39	33.6	8
9	Oakland College of Medicine and Surgery.—R	...	...	...	...	...	...	4	0	4	4	0	0.	9
10	University of Southern California College of Medicine—R	21	0	26	6	16	13	26	6	114	89	25	21.9	10
11	College of Physicians and Surgeons, Los Angeles.—R	...	...	...	...	2	0	4	0	6	6	0	0.	11
	COLORADO.													
12	Denver and Gross College of Medicine.—R	10	0	16	1	16	4	10	8	65	52	13	20.0	12
13	Denver Homeopathic College.—H	...	...	...	...	2	0	0	1	3	2	1	33.3	13
14	Colorado School of Medicine.—R	5	0	7	0	10	0	6	0	28	28	0	0.	14
	CONNECTICUT.													
15	Yale University Department of Medicine.—R	43	2	38	2	29	0	24	0	138	134	4	2.9	15
	DISTRICT OF COLUMBIA.													
16	George Washington University, Department of Medicine.—R	12	2	67	3	55	12	61	19	231	195	36	15.6	16
17	Georgetown University, School of Medicine.—R	18	0	37	4	26	8	28	9	130	109	21	16.2	17
18	Howard University, Medical Department.—R	19	8	22	15	27	11	28	9	139	96	43	30.9	18
	GEORGIA.													
19	Atlanta College of Physicians and Surgeons.—R	42	14	36	5	11	5	69	4	186	158	28	15.1	19
20	Georgia College of Eclectic Medicine and Surgery.—E	1	3	11	3	1	4	18	1	48	37	11	22.9	20
21	Medical College of Georgia.—R	6	3	30	0	2	1	34	5	81	72	9	11.1	21
22	Atlanta School of Medicine.—R	...	...	...	...	...	...	19	2	21	19	2	9.5	22
	ILLINOIS.													
23	American Medical Missionary College.—R	13	1	13	1	16	3	27	2	76	69	7	9.2	23
24	Bennett College of Eclectic Medicine and Surgery.—E	14	6	16	1	30	8	65	7	147	125	22	15.0	24
25	College of Medicine and Surgery.—Ph.M	20	9	12	7	7	5	4	5	69	43	26	37.7	25
26	College of Physicians and Surgeons, Chicago.—R	229	18	237	17	259	21	251	22	1,044	966	78	7.5	26
27	Hahnemann Medical College and Hospital.—H	64	7	53	2	59	12	71	13	281	247	34	12.1	27
28	Hering Medical College.—H	14	0	17	1	16	4	12	6	70	59	11	15.7	28
29	Illinois Medical College.—R	28	12	51	14	41	17	39	7	209	159	50	23.9	29
30	Jenner Medical College.—R	11	2	18	2	15	6	32	5	91	76	15	16.5	30
31	Northwestern University Medical School.—R	121	5	159	2	174	9	159	7	636	613	23	3.6	31
32	Rush Medical College.—R	258	16	245	15	207	21	158	7	927	868	59	6.4	32
33	National Medical University	7	4	21	9	22	1	14	2	80	64	16	20.0	33
34	American College of Medicine and Surgery.—E	0	1	22	2	43	7	30	4	109	95	14	12.8	34
35	Dearborn Medical College, Chicago.—R	...	...	18	0	28	1	31	6	84	77	7	8.3	35
	INDIANA.													
36	Indiana Med. College, the School of Med. of Purdue Univ.—R	6	3	31	6	113	28	127	15	329	277	52	15.8	36
37	Physio-Medical College of Indiana.—Ph.M	2	0	4	1	5	7	6	2	27	17	10	37.0	37
38	Eclectic Medical College of Indiana.—E	0	1	2	0	5	1	5	1	15	12	3	20.0	38
	IOWA.													
39	Drake University College of Medicine.—R	11	4	14	1	14	4	13	0	61	52	9	14.8	39
40	Keokuk Medical College, College of Phys. and Surg.—R	42	14	49	13	55	26	58	27	284	204	80	28.2	40
41	Sioux City College of Medicine.—R	15	2	16	3	15	0	15	4	70	61	9	12.9	41
42	State University of Iowa, Homeopathic Medical Dept.—H	13	0	9	1	3	0	1	0	27	26	1	3.7	42
43	State University of Iowa College of Medicine.—R	93	5	57	8	77	5	73	2	320	300	20	6.2	43
	KANSAS.													
44	Kansas Medical Coll., Medical Dept. of Washburn Coll.—R	2	2	7	3	17	1	19	1	52	45	7	13.5	44
45	University of Kansas School of Medicine.—R	...	...	...	...	...	...	63	2	65	63	2	3.0	45
	KENTUCKY.													
46	Hospital College of Medicine.—R	23	5	20	16	21	22	31	17	155	98	60	38.7	46
47	Kentucky School of Medicine.—R	32	19	35	15	33	24	28	23	209	128	81	38.7	47
48	Louisville Medical College.—R	30	9	35	12	19	16	35	13	169	119	50	29.6	48
49	Louisville National Medical College.—H	...	...	1	0	1	0	...	...	2	2	0	0.	49
50	Southwestern Homeopathic Medical College.—H	1	0	...	...	1	2	1	3	8	3	5	62.5	50
51	University of Louisville Medical Department.—R	17	10	28	17	27	16	47	20	182	119	63	34.6	51
52	Kentucky University, Medical Department.—R	13	1	24	8	18	17	32	16	129	87	42	32.6	52
	LOUISIANA.													
53	Flint Medical College of New Orleans University.—R	2	5	8	10	2	10	11	13	61	23	38	62.3	53
54	Tulane University of Louisiana, Medical Department.—R	79	0	82	7	80	9	109	6	372	350	22	5.9	54
	MAINE.													
55	Medical School of Maine, Bowdoin College.—R	24	4	27	5	24	0	27	1	112	102	10	8.9	55
	MARYLAND.													
56	Baltimore Medical College.—R	110	25	92	29	89	35	111	41	532	402	130	24.4	56
57	Baltimore University School of Medicine.—R	19	24	20	45	17	39	12	26	202	68	134	66.3	57
58	College of Physicians and Surgeons of Baltimore.—R	56	18	93	33	79	16	69	15	379	297	82	21.6	58
59	Johns Hopkins Medical School.—R	52	1	58	1	61	0	76	1	250	247	3	1.2	59
60	Southern Homeopathic Medical College.—H	2	1	14	2	14	2	2	4	41	32	9	22.0	60
61	University of Maryland, School of Medicine.—R	89	13	109	32	83	31	89	20	466	370	96	20.6	61
62	Woman's Medical College of Baltimore.—R	2	0	1	0	6	0	1	1	11	10	1	9.1	62
63	Maryland Medical College.—R	31	25	55	36	52	62	30	39	330	168	162	49.1	63
	MASSACHUSETTS.													
64	Boston University School of Medicine.—H	39	7	36	1	15	2	44	7	151	134	17	11.3	64
65	College of Physicians and Surgeons.—R	11	7	22	10	18	13	20	12	113	71	42	37.2	65
66	Harvard University Medical School.—R	132	1	155	1	110	3	118	3	523	515	8	1.5	66
67	Tufts College Medical School.—R	48	7	59	10	67	7	83	5	286	257	29	10.1	67
	MICHIGAN.													
68	Detroit College of Medicine.—R	20	3	28	8	19	4	81	6	164	148	16	9.8	68
69	Detroit Homeopathic Medical College.—H	1	0	2	1	1	0	7	1	13	11	2	15.4	69
70	Michigan College of Medicine and Surgery.—R	1	0	7	4	1	1	14	0	28	23	5	17.9	70
71	Grand Rapids Medical College.—R	3	0	...	...	0	1	8	0	12	11	1	8.3	71
72	University of Michigan, Department of Med. and Surg.—R	65	3	98	11	113	16	91	6	403	367	36	8.9	72
73	University of Michigan, Homeopathic Medical College.—H	...	...	3	1	13	0	18	1	36	34	2	5.6	73
	MINNESOTA.													
74	University of Minnesota College of Medicine and Surgery.—R	106	7	104	2	108	13	65	9	414	383	31	7.5	74
75	University of Minnesota, Homeopathic Department.—H	1	0	3	1	2	0	2	0	9	8	1	11.1	75
76	Minnesota College of Physicians and Surgeons.—R	36	8	23	16	22	14	32	13	164	113	51	31.1	76
	MISSISSIPPI.													
77	Mississippi Medical College.—R	...	...	...	...	...	...	...	...	....	....	...	....	77

	COLLEGE.	1903		1904		1905		1906		Total Examined.	Passed.	Failed.	Percentage of Failures.	Number.
		P	F	P	F	P	F	P	F					
	MISSOURI.													
78	University Medical College of Kansas City.—R	8	11	16	15	10	2	53	6	121	87	34	28.1	78
79	Kansas City Hahnemann Medical College.—H	2	2	3	0	50	7	6	2	72	61	11	15.3	79
80	Eclectic Medical University.—E	0	1	2	1	2	1	7	9	23	11	12	30.4	80
81	Ensworth Central Medical College.—R	1	2	18	9	18	14	23	28	118	65	53	44.9	81
82	Barnes Medical College.—R	24	21	45	20	42	21	74	62	309	185	124	40.1	82
83	St. Louis University, Medical Department.—R	18	3	45	8	72	12	155	58	371	290	81	21.8	83
84	St. Louis College of Physicians and Surgeons.—R	15	6	36	9	34	3	38	44	190	123	67	35.3	84
85	American Medical College.—E	2	2	1	4	5	3	11	4	32	19	13	40.6	85
86	Homeopathic Medical College of Missouri.—H	4	1	1	4	5	0	3	2	20	13	7	35.0	86
87	Washington University Medical Department.—R	10	3	38	8	52	8	83	6	208	183	25	12.0	87
88	University of Missouri Department of Medicine.—R	8	1	2	0	6	0	11	1	29	27	2	6.9	88
	NEBRASKA.													
89	University of Nebraska, College of Medicine—R	11	3	36	5	33	9	12	8	122	92	30	24.6	89
90	John A. Creighton Medical College.—R	10	1	39	1	34	5	42	13	145	125	20	13.8	90
91	Lincoln Medical College.—E	2	1	21	6	16	5	14	5	70	53	17	24.3	91
92	Nebraska College of Medicine.—R	...	...	...	...	...	...	...	...	....	....	...	....	92
	NEW HAMPSHIRE.													
93	Dartmouth Medical College.—R	25	5	12	2	17	1	21	4	87	75	12	13.8	93
	NEW YORK.													
94	Albany Medical College.—R	35	3	46	5	54	0	40	2	185	175	10	5.4	94
95	College of Physicians and Surgeons.—R	167	3	229	9	210	9	185	8	825	791	34	4.1	95
96	Cornell University Medical College.—R	56	1	67	2	79	0	62	1	268	264	5	1.5	96
97	Eclectic Medical College of City of New York.—E	15	1	11	0	13	3	15	2	60	54	6	10.0	97
98	Long Island College Hospital.—R	48	5	50	1	79	10	69	4	266	246	20	7.5	98
99	New York Homeopathic Medical College and Hospital.—H	96	5	81	1	24	2	85	2	126	116	10	7.9	99
100	New York Medical College and Hospital for Women.—R	11	0	9	0	10	2	9	2	43	39	4	9.3	100
101	University and Bellevue Hospital Medical College.—R	94	14	87	12	67	9	79	5	367	327	40	10.9	101
102	Syracuse University College of Medicine.—R	30	0	35	0	32	0	24	1	123	122	1	0.8	102
103	University of Buffalo, Medical Department.—R	45	4	46	4	56	1	46	3	205	193	12	5.9	103
	NORTH CAROLINA.													
104	Leonard School of Medicine.—R	19	11	12	22	31	25	32	24	166	84	82	49.4	104
105	North Carolina Medical College.—R	12	1	19	1	22	8	26	6	95	79	16	16.8	105
106	University of North Carolina Medical Department.—R	4	0	4	0	8	1	10	3	30	26	4	13.3	106
	OHIO.													
107	Western Reserve University Medical College.—R	9	0	32	2	26	3	22	2	95	88	7	7.4	107
108	Cleveland College of Physicians and Surgeons.—R	3	1	16	1	17	1	23	3	65	59	6	9.2	108
109	Cleveland Homeopathic Medical College.—H	14	4	18	10	31	3	14	2	96	77	19	19.8	109
110	Eclectic Medical Institute.—E	11	8	20	13	39	12	36	10	149	106	43	28.8	110
111	Medical College of Ohio.—R	24	3	49	1	38	7	52	2	176	163	13	7.4	111
112	Pulte Medical College.—H	2	2	5	3	9	6	2	2	31	18	13	41.9	112
113	Miami Medical College.—R	10	3	27	6	25	1	29	2	103	91	12	11.6	113
114	Ohio Medical University.—R	27	4	49	12	46	9	51	5	203	173	30	14.8	114
115	Starling Medical College.—R	13	6	36	10	36	7	30	7	145	115	30	20.7	115
116	Toledo Medical College.—R	0	1	3	3	6	1	10	3	27	19	8	29.6	116
	OKLAHOMA.													
117	Epworth University College of Medicine.—R	...	...	...	...	...	...	...	...	....	....	...	....	117
	OREGON.													
118	University of Oregon, Medical Department.—R	1	0	19	0	17	19	20	8	84	57	27	32.1	118
119	Willamette University Medical Department.—R	1	0	9	1	6	6	4	17	44	20	24	54.5	119
	PENNSYLVANIA.													
120	Temple College of Philadelphia, Department of Medicine.—R.	...	...	1	0	2	0	13	0	16	16	0	0.	120
121	University of Pennsylvania, Department of Medicine.—R	136	3	123	8	164	8	148	4	594	571	23	3.9	121
122	Hahnemann Medical College and Hospital.—H	22	0	81	3	51	2	62	1	222	216	6	2.7	122
123	Jefferson Medical College, Philadelphia.—R	148	14	189	26	208	11	210	26	832	755	77	9.2	123
124	Woman's Medical College of Pennsylvania.—R	32	1	49	5	49	2	42	1	181	172	9	5.0	124
125	Medico-Chirurgical College of Philadelphia.—R	81	5	81	21	109	24	106	9	436	377	59	13.5	125
126	Western Pennsylvania Medical College.—R	72	16	59	13	76	12	52	12	312	259	53	17.0	126
	SOUTH CAROLINA.													
127	Medical College of the State of South Carolina.—R	21	1	24	2	26	7	15	3	99	86	13	13.1	127
	TENNESSEE.													
128	Tennessee Medical College.—R	13	6	4	6	17	5	14	10	75	48	27	36.0	128
129	Knoxville Medical College.—R	...	...	0	3	1	6	1	2	13	2	11	84.6	129
130	University of Nashville Medical Department.—R	18	3	38	7	48	11	56	18	199	160	39	19.6	130
131	Vanderbilt University Medical Department.—R	29	7	48	3	30	7	36	5	165	143	22	13.3	131
132	University of Tennessee Medical Department.—R	24	1	25	18	22	16	22	15	143	93	50	35.0	132
133	Meharry Medical College.—R	12	7	32	14	27	25	60	51	228	131	97	42.5	133
134	Memphis Hospital Medical College.—R	54	11	102	59	55	31	81	24	417	292	125	30.0	134
135	University of the South, Medical Department.—R	25	15	34	36	32	27	22	20	211	113	98	46.4	135
136	Chattanooga Medical College.—R	10	4	29	15	21	23	37	17	156	97	59	31.4	136
137	University of West Tenessee Medical Department.—R	...	...	2	1	0	2	0	2	7	2	5	71.4	137
138	College of Physicians and Surgeons.—R	...	...	...	...	...	...	...	...	....	....	...	....	138
	TEXAS.													
139	Fort Worth University Medical Department.—R	4	1	4	0	3	0	15	0	27	26	1	3.7	139
140	University of Texas, Department of Medicine.—R	24	1	22	0	12	0	20	0	79	78	1	1.3	140
141	Baylor University College of Medicine.—R	6	3	1	1	4	3	10	1	29	21	8	27.6	141
142	Physio-Medical College of Texas.—R	...	...	...	...	...	...	2	0	2	2	0	0.	142
143	Gate City Medical College, Texarkana.—R	...	...	...	...	2	3	2	2	9	4	5	55.5	143
144	Southwestern University Medical College, Dallas.—R	...	...	...	...	1	1	5	1	8	6	2	25.0	144
145	College of Physicians and Surgeons, Dallas.—R	...	...	...	...	1	0	3	5	9	4	5	55.5	145
	VERMONT.													
146	University of Vermont Medical Department.—R	53	11	72	15	75	12	52	7	297	252	45	15.2	146
	VIRGINIA.													
147	Medical College of Virginia.—R	38	8	53	4	40	12	51	5	211	182	29	13.7	147
148	University College of Medicine.—R	46	4	35	5	52	5	30	4	181	163	18	9.9	148
149	University of Virginia Department of Medicine.—R	42	3	80	9	58	5	46	1	187	176	11	5.9	149
	WISCONSIN.													
150	Milwaukee Medical College.—R	5	0	5	3	19	2	15	.	50	44	6	12.0	150
151	Wisconsin College of Physicians and Surgeons.—R	2	1	3	2	14	3	15	.	42	34	8	19.0	151
152	Canadian Colleges	107	3	99	12	112	36	105	48	517	423	94	18.2	152
153	Foreign	98	35	109	59	106	40	101	46	594	414	180	30.3	153
154	Miscellaneous Medical Colleges and Undergraduates	...	...	242	264	202	244	395	402	1,749	839	910	52.1	154
	Totals		4,900		6,908		7,150		8,037	26,995	.....	.....	.....	....
	Totals—Examined—Passed		4,206		5,583		5,673		6,368	.....	21,830	.....	.....	....
	Totals—Examined—Failed		694		1,325		1,477		1,669	.....	.....	5,165	....	....
	Percentage of Failures		14.2		19.2		20.7		20.8	.....	.....	.....	19.1	...

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, MAY 25, 1907.

EXPERIMENTAL THERAPEUTIC STUDIES OF TRYPANOSOMIASIS.

At a recent meeting of the Berlin Medical Society Ehrlich[1] discussed the results of his experimental therapeutic studies of trypanosome infections. He has tried the effects of innumerable chemical substances on these infections in animals in the hope that sooner or later some substance or substances would be found which would have a specific curative effect on human trypanosomiasis. In this study, which is yet in its beginning, observations of great interest have been made, especially on Ehrlich's well known ideas about the relations between chemical constitution and biologic action.

It may be recalled that Ehrlich found that, in the case of mice infected with nagana trypanosomes, a certain anilin dye is curative if injected within twenty-four hours after the infection. This substance has been called trypan red. It has no effect on animals infected with *Trypanosoma brucei*. In this connection it may be recalled that a form of arsenic acid (atoxyl) has been used in sleeping sickness, and in some instances it seems with remarkable results. Ehrlich has found further that a certain combination of fuchsin also is effective in experimental infections even when taken internally.

When trypan red does not actually cure infection in mice, twenty to thirty days may pass after the injection before parasites again appear in the blood, and during this time infection with new parasites does not hasten the death of animals, evidently because a form of immunity has been established. Furthermore, feeding fuchsin drives nagana trypanosomes out of the blood temporarily, but only for one or two times. Eventually the fuchsin becomes ineffective either because the mouse organism interferes or because the parasites become immune to the remedy. To settle this question parasites were taken from a treated mouse and injected into a new mouse, which was then treated with fuchsin, but without any effect, thus showing plainly that the parasites no longer were influenced by the fuchsin.

A similar immunity is obtainable with respect to other substances also, and this immunity may be inherited through many generations. The immunity is limited to the particular substance used, that is to say, a strain of trypanosomes which is immune to fuchsin is not immune to trypan red or atoxyl. In trypanosomes—so reasons Ehrlich—there are consequently different protoplasmic groups with which the various substances may unite and thereby exercise special actions of profound significance. As a further illustration of this point it may be cited that paramecia live in strong solutions of trypan red, but that in very weak ones they lose their power to multiply; hence there must be a special affinity between the dye and parts of the protoplasm that directly or indirectly serve proliferation. The instances of failures in the treatment of sleeping sickness with atoxyl may depend on the inability of atoxyl to act on certain strains of trypanosomes and in such cases it is possible that combinations of substances destructive of trypanosomes may be found effective. Certainly it is an ambitious undertaking to attempt the discovery of specific remedies in the manner outlined; but, as we see, the search is proving fruitful in various ways and further developments will be awaited with great interest.

1. Berl. med. Woch., xliv, Nos. 9-12, 1907. See also THE JOURNAL, page 1219, abstract 26.

SURGERY 2500 B. C.

One of the recent publications of the Carnegie Institution in Washington is a series of Egyptologic researches by W. Max Müller[1] containing two plates which the author says "may claim to be the earliest known representations of surgical operations." As Dr. Müller, who is, we understand, a grandson of the great philologist of the same name, is a distinguished authority in Egyptology, and as this work represents some of the most recent results of his explorations, it would seem probable that we have here the first pictures of surgeons at work. The inscribed tablets, of which these pictures constitute part, were found in the necropolis of Memphis. The tomb in which they were found was made not later than 2500 B. C. The complete significance of them has not yet been worked out. Dr. Müller prefers, however, to communicate these extracts without waiting further because of their great interest and because of the light they may serve to throw on the early history of medicine and surgery for those who are working in that department of knowledge.

Considering that those were the days when anesthetics had not even been thought of, it is not surprising that a striking feature of the pictures is the efforts of the patients to suppress their pain by holding their arms, with the hands pressed in the axillæ, and that one patient holds the operator's hand and another implores him: "Don't hurt me thus." Two of the operations represented—though not with sufficient clarity to make their entire purport readily recognizable—are on the palm and the foot, the latter probably an operation on the toes. The upper row of the same tablet contains what is evidently a picture of the opening of a boil on

1. Egyptological Researches, Results of a Journey in 1904, Published by the Carnegie Institution in Washington, 1906. Quarto, 62 pp, 106 plates. Price $2.75.

the neck. While the editor calls it a boil, its position at the back of the neck is exactly that in which carbuncles usually occur, and the size of the lesion seems to indicate that it was more than a simple furuncle. This will be interesting to pathologists as well as to surgeons. According to Dr. Müller, the operator sits on a brick in order to be raised high enough to see better, and seems to hold the head of his victim with his left hand while the right hand operates. Unfortunately, the stone is so broken at the top that these latter details are uncertain. In the same row of pictures there is a representation which requires still more restoration, but which seems to picture the surgeon as opening a boil or operating on some other pathologic condition on the knee.

The lower part of one of the tablets has two representations of circumcisions. The only early representation of such a ceremony among the Egyptians that has hitherto been known to be in existence was that published by Chabas in the *Revue Archéologique,* 1861, from the Temple of Khons in Thebes. This picture was reproduced and discussed by Ebers, one of the great authorities on the early history of medicine in Egypt, in his book on "Egypt and the Book of Moses." These pictures presented by Dr. Müller have the advantage of being about thirteen hundred years earlier than the previous one and, besides, are in an unmutilated condition, while the other required restoration, some of which was not entirely acceptable to all the authorities. Here once more the question of the discomfort of the patient is one of the things brought out very strongly in the drawings, and the patients, instead of being infants or even young boys, are youths of twenty or more, so that it is evident that the earliest custom in Egypt in regard to circumcision was perfectly in harmony with the early Semitic usage in this matter, and the rite seems to have preceded marriage. The instrument used for this purpose was a flint, showing how old is the ritual usage in this regard.

The operators in the pictures are dressed in priestly garments. The other surgeons, however, are dressed in the ordinary clothing of better class Egyptians, so that "it could not be concluded from these pictures," Dr. Müller says, "that the physicians were always priests at that time, although this is elsewhere known to be the rule for the better educated physicians." It would seem, indeed, as though there had begun already to be some distinctions between those who did ordinary surgical operations and those who performed the operations of religious ritual. This is a precious bit of information if it would indicate, as seems to be the case, that the surgical profession was even then assuming a certain independence of character which was to lead later to the development of a separate profession of surgery, at least, if not also of medicine. The whole subject is extremely interesting to those who have been following recent developments in the history of medicine, and though the chapter in the present volume is suggestive rather than informing to any great degree, it serves to call attention to a new and most interesting phase of the origin of medicine and surgery.

PRESCRIPTION REFILLING AND THE PURE FOOD LAW IN TEXAS.

A question seems to have arisen in Texas as to the application to physician's prescriptions of the provision in the state pure food law that drugs should be considered "misbranded" if the package fails to bear a statement as to the proportions of alcohol, morphin and other poisons contained therein. It is not quite clear why the question should have arisen, but it was evidently deemed of sufficient importance to call out an opinion from the assistant attorney-general that physicians' prescriptions were exempted, not being packages put up for commercial handling within the meaning of the law. Inferentially the opinion might be taken to imply that the commercial use of such prescriptions would bring them under the statute, though whether or not it technically does this we are not prepared to give an opinion. At all events, it would seem possible for a question to be raised as to the legality under the pure food law of druggists or others refilling prescriptions for their own profit, even for the original proprietor, without violating the confidential character which the combination should have. A prescription is intended for a particular case at a particular time, and the compounding of it under any other conditions would, it seems, be a general use that would bring it under the head of commercial packages and be equivalent to placing it on the market for sale. Even if it is not kept in stock, the filing of the prescription and its subsequent use, independent of any order of the prescriber, amounts practically to about the same thing.

THE MAKING OF DEATH CERTIFICATES FOR EDDYITE VICTIMS.

A New York coroner's jury calls the attention of the health department, the district attorney and the county medical society to the practice of certain physicians who furnish death certificates for persons dying under Eddyite treatment. The jury declares that this aids in the evasion of the state laws, and it requests that steps be taken to put a stop to this practice. The recommendation is an excellent one. More practical aid and comfort are given to Eddyites and other irregulars by the medical profession than is to the advantage of the public. The importunities of bereaved friends, and the desire to save them from the annoyance and semi-scandal of a public inquest as an additional affliction, are enough to make many benevolent physicians give a death certificate, although they are well aware that all sorts of quacks and irregulars profit by their soft-heartedness and parade the death records as evidence of their own success and the lack of success of the regular physicians. We are not sure as to the possible legal difficulties in refusing a death certificate when one has treated a patient to any extent whatever when one is sure of the diagnosis, and there is no question of any criminality except Eddyite fanaticism and ignorant neglect. Of

course no prudent man would sign a certificate when there is any question of fraud or violence, but there are possibilities of deception, and undoubtedly some individuals have brought serious trouble on themselves in this way. It would be an excellent rule if physicians were forbidden to give death certificates for patients coming into their hands already moribund after treatment by quacks. This might work hardship in certain instances, but the general result would be for the better, to the sick, to the community, and to the medical profession. We hope the recommendation of the New York coroner's jury will have effect.

THE POSTOFFICE AND UNCLEAN ADVERTISEMENTS.

A news item, insignificant in size and tucked away unobtrusively in one of the large Chicago dailies, contains a statement of interest. The postoffice department, it is stated, has determined to take action regarding the class of medical advertisements carried by the Chicago papers. An order issued May 20 by the Postmaster General, according to the report, declared unmailable over twenty medical advertisements being carried in the Chicago dailies. It is high time that some action were taken. We recently[1] referred to the preposterous inconsistency between the editorial opinions on clean advertising and the class of advertisements carried in a Chicago newspaper. The postoffice order evidently affects only advertisements of an immoral nature—the professional abortionists, etc. It is unfortunate that there is no way of ridding the papers of such advertising as offends the taste. In a recent Sunday issue of one of the largest, and supposedly most respectable, Chicago papers was a two-column advertisement with the glaring caption "VARICOCELE." Then followed a quasi-scientific description of this interesting pathologic condition. A salacious morsel to serve up for the family Sunday reading! It is to be regretted that the law can not be invoked to demand of such papers that tribute to common decency which they seem unwilling to give voluntarily.

THE QUESTION OF OPERATION IN CASES OF DIABETES.

Some diversity of opinion exists as to the expediency of operating in cases of diabetes mellitus. Diabetics are rather prone to infection, and the wounds necessarily resulting in the course of surgical procedures constitute inviting portals for the entrance of pyogenic and other pathogenic micro-organisms. Moreover, the vital resistance of the diabetic patient is diminished by reason of his condition. In addition, changes in the blood vessels, giving rise to interference with the circulation of the blood, often develop, especially in the extremities. Finally, the administration of an anesthetic may superinduce the development of the acid intoxication that not uncommonly causes a fatal termination. For these reasons it would seem that the decision to operate in a given case should not be made lightly, but should be controlled by a judicial conservatism. The surgeon will have to weigh carefully all the circumstances in order to determine whether the patient will be placed in the greater danger from interference than from non-interference. As the result of a not inconsiderable experience and from a study of the literature of the subject, Dr. Joseph Wiener[1] points out that a distinction should be made in this connection between disorders complicating and those merely concurrent with the diabetes. In his opinion, operations for the relief or correction of conditions not due to the primary disease should be performed for exactly the same indications as they are undertaken in the absence of diabetes. The abnormal products—acetone, diacetic, oxybutyric and lactic acids—in the blood of diabetic patients do harm in two ways, (1) by lowering the resistance of the tissues and thus increasing the liability of infection, and (2) by contributing to the development of arteriosclerosis. The last-named condition is an important factor in the production of diabetic gangrene, which is of the "dry" variety in the absence of infection and becomes "moist" when infection is superadded. The endeavors of the surgeon should be directed, so far as possible, to the avoidance of infection. Arteriosclerosis and gangrene are more common in the lower than in the upper extremities. Wiener maintains that if more than three toes are involved in the gangrenous process, especially if there is associated cellulitis, a high amputation is generally indicated; it is also indicated if the infection is progressive, and if there is any doubt as to the site of amputation. If the urinary excretion of ammonia exceeds one gram in twenty-four hours it is wise to defer operation until the amount is considerably reduced by dietetic means. The prognosis depends on the degree of acid intoxication rather than on the amount of glucose in the urine. A rigid meat diet will reduce the amount of sugar in the urine, but may superinduce fatal coma through acid intoxication. The administration of sodium bicarbonate before and after operation is capable of doing good without any risk of harm. So far as possible ether and chloroform should be avoided as anesthetics, and whenever operations on diabetic patients are required they should be performed with the greatest simplicity and celerity.

INTERMITTENT FEVER IN VISCERAL SYPHILIS.

Fevers of obscure origin are of not infrequent occurrence, and, though a good deal has been written on the subject of syphilitic fever in the past few years, the profession is not yet alive to the fact that it is relatively common. Especially are medical men slow to realize that the tertiary lesions of the disease are associated in some instances with febrile attacks which may closely simulate other fevers, and especially malaria. We refer sceptics to the recent article of Mannaberg[2] for a temperature chart which is a typical example of the mimicry of malaria by tertiary syphilis. Apparently fever is especially liable to accompany certain forms of visceral lues, notably hepatic involvement, but the studies of Janeway and Futcher in this country have shown that this is not always the case, and that in certain instances the fever may be practically the only symptom.

1. THE JOURNAL, May 4, 1907, 1530.

1. Medical Record, May 4, 1907, p. 722.
2. Ztschr. für klin. Med., lxii, 1907.

STATE BOARD EXAMINATIONS FOR 1906.

We publish this week tabulated statistics based on the examinations of the various state examining and licensing boards for 1906. This is the fourth consecutive year we have published these statistics and we believe they are more complete this year than ever before. Instead of the large cumbersome sheets, the tables have been so divided as to go on the regular pages of THE JOURNAL. They have been further improved for easy reference by the addition of marginal numbers. The methods of procedure in granting license in Colorado, while they may be excellent in their end results, are so much at variance with the methods of other states that it is impossible for a fair comparison to include the figures for that state in some of the tables.

TABLE E.—COLLEGES GROUPED BY STATES.
Showing Number Examined and Percentage of Failures.

Colleges of	Graduates. Of 1901 to 1906. Number Examined.	Of 1901 to 1906. Per cent. Failed.	Of 1906 and prev. Number Examined.	Of 1906 and prev. Per cent. Failed.	Of all years. Number Examined.	Of all years. Per cent. Failed.	All years Examined 1904-6. Number Examined.	All years Examined 1904-6. Per cent. Failed.	Rank according to number examined.	Rank according to Per cent of failures.
Alabama	41	0.	1	0.	42	0.	192	8.5	22	4
Arkansas	8	12.5	2	0.	10	10.0	19	15.8	32	21
California	127	12.6	11	9.1	138	12.3	574	20.7	14	26
Colorado	18	27.8	7	57.1	25	36.0	96	14.6	29	16
Connecticut	21	0.	3	0.	24	0.	138	2.9	24	1
Dist. of Columbia	146	24.0	8	25.0	154	24.0	500	20.0	15	25
Georgia	141	7.1	10	20.0	152	7.9	336	14.9	19	17
Illinois	898	7.9	88	25.0	986	9.4	3,823	9.5	1	8
Indiana	148	8.8	8	62.5	156	11.5	371	17.5	17	23
Iowa	167	17.4	21	14.3	193	17.1	762	15.6	10	20
Kansas	81	3.7	7	14.3	85	3.5	117	7.7	26	3
Kentucky	214	30.8	51	49.0	266	34.6	854	35.2	9	31
Louisiana	132	12.9	7	28.6	139	13.7	433	13.9	16	14
Maine	21	0.	7	14.3	28	3.1	112	8.9	27	7
Maryland	503	26.8	33	49.0	537	27.4	2,211	27.9	4	27
Massachusetts	258	10.1	34	2.9	292	9.2	1,073	8.9	8	6
Michigan	202	1.4	31	35.5	233	6.0	656	9.5	11	9
Minnesota	115	19.1	6	0.	121	18.2	587	14.1	12	15
Missouri	645	32.1	51	29.4	696	31.9	1,493	28.6	6	28
Nebraska	90	24.4	4	100.0	94	27.7	337	19.9	18	24
New Hampshire	20	15.0	5	20.0	25	19.0	87	13.8	31	13
New York	536	4.1	56	10.7	592	4.7	2,468	5.7	3	2
North Carolina	100	33.0	1	0.	101	32.7	291	35.0	21	30
Ohio	269	7.4	38	47.3	307	12.4	1,000	16.6	7	22
Oregon	49	51.0	....	....	49	51.0	128	39.8	25	32
Pennsylvania	629	7.2	57	14.0	686	7.7	2,593	8.8	2	5
South Carolina	17	11.8	1	100.0	18	16.7	99	13.1	28	11
Tennessee	444	31.1	47	31.9	493	33.3	1,614	33.0	5	29
Texas	64	14.1	2	0.	66	13.6	163	13.5	23	12
Vermont	51	5.9	8	50.0	59	11.9	297	15.2	20	18
Virginia	123	6.3	14	14.3	137	7.3	579	10.0	13	10
Wisconsin	32	9.4	2	50.0	34	11.8	92	15.2	30	19
Totals	6310	15.8	621	26.7	6938	16.9	24,135	16.5	....	....

Tables A, B and C, which are published on pages 1764 to 1775, are so arranged that, reading from left to right, gives the results by colleges, showing how many graduates appeared for examination in each state and whether they passed or failed, as well as the total number examined during the year, the number passed, the number failed, the percentage of failures and the number of states where graduates of the school appeared for examination. Reading from above downward gives the results by states, showing the number registered and rejected for each college, as well as the total examined, total registered, total rejected and the percentage rejected. The fact that the majority of graduates take the licensing examination in the state in which the college is located is shown by the grouping of figures which forms a dark diagonal zone passing from the left upper to the right lower corners of each of these tables. Numerous important deductions are possible, warranting a careful study of each table.

Table A shows the results for all candidates who took the examinations during the year. Table B gives results for graduates of 1901 to 1906, inclusive (recent graduates), while Table C gives results for older practitioners or those who graduated in 1900 or previously. A comparison of the failure percentages of any college in Tables A and B will indicate whether the college is improving in recent years or not.

There were 8,035 applicants examined during the year 1906, of whom 6,520, 81.2 per cent., were recent graduates, 793, 9.8 per cent., were old practitioners, and 703, 9.0 per cent., were non-graduates. There were also 19 graduates for whom no year of graduation was recorded. Besides these, there were 1,497 registrations (see Table N)., of which number 883 were registered other than by written examination and 614 under the reciprocity provision, making a grand total of 7,865 who were registered during 1906.

The failures are in about the same proportion as for 1905, there being 16.4 per cent. for recent graduates, 27.1 per cent. for old practitioners and 51.3 per cent. for non-graduates. The following comparison with results of previous years is interesting:

COMPARISON WITH PREVIOUS YEARS (TABLES A, B, C, AND D).

Year.	Total Examined.	Examined—Passed.	Examined—Failed.	Percentage Failed.	Recent Grads. Examined.	Percentage Failed.	Older Pract. Examined.	Percentage Failed.	Non-Grads. Examined.	Percentage Failed.	Regist'd Without Written Examination.	Total Registered.
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6520	16.4	793	27.1	703	51.3	1497	7865

The apparent increase in the number registered without written examination in 1906 as compared with previous years is due largely to incomplete data received for 1904 and 1905.

Table D, (page 1776) gives the number examined by state boards for 1903 to 1906, inclusive, showing the total number examined from each college, the number who passed, the number who failed and the percentage of failures. The percentage of failures, therefore, shows the average of each school based on the reports received from state boards for the past four years. For the sake of comparison with the results of the individual years this table is of much value. This gives sufficient data in regard to practically every medical college, from which a fair idea can be obtained of its standing. It is interesting to note how the classification of schools from the statistics of individual years is supported by this table. In four years at least 26,995 applicants have been

TABLE F—COLLEGES HAVING 50 OR MORE EXAMINED.

TABLE SHOWS TOTAL NUMBER EXAMINED, PERCENTAGE OF FAILURES AND NUMBER OF STATES IN WHICH EACH COLLEGE HAD REPRESENTATIVES

Name of College.	Graduates all Years.			Graduates 1901-1903.			Graduates 1900 and Prev.			Exam'd. 1903 to 1906 incl.		
	No. Examined.	Per cent. Failed.	No. States.	No. Examined.	Per cent. Failed.	No. States.	No. Examined.	Per cent. Failed.	No. States.	No. Examined.	Per cent. Failed.	Margin No.
College of Physicians and Surgeons, Chicago	273	8.0	27	259	6.6	24	14	35.7	9	1,044	7.5	26
Jefferson Medical College	236	11.0	36	218	9.6	31	18	27.8	11	812	9.2	123
St. Louis University	213	27.2	21	196	28.0	16	17	17.7	12	371	21.8	83
College of Physicians and Surgeons, New York	193	4.1	20	180	3.9	15	13	7.7	13	825	4.1	95
Northwestern University	166	4.2	20	157	1.9	18	9	44.4	8	636	3.6	31
Rush Medical College	165	4.2	24	135	2.2	20	30	13.3	14	927	6.4	32
Baltimore Medical College	152	27.0	22	144	27.0	20	8	25.0	7	532	24.4	56
University of Pennsylvania	152	2.6	28	129	2.3	24	23	4.4	15	594	3.9	121
Indiana Medical College	142	10.6	13	136	8.8	12	6	50.0	4	329	15.8	38
Barnes Medical College	136	45.5	21	125	45.6	16	11	45.4	9	309	40.1	82
Harvard University Medical School	121	2.5	21	104	2.9	15	17	0.	9	523	1.5	66
Tulane University of Louisiana	115	5.2	16	108	3.7	14	7	28.6	7	372	5.9	84
Medico-Chirurgical College of Philadelphia	115	7.0	13	112	7.1	13	3	33.3	2	436	13.5	126
Meharry Medical College	111	45.9	20	107	45.7	19	3	33.3	3	228	42.5	133
University of Maryland	109	10.1	23	101	18.8	21	8	12.5	6	466	20.6	61
Memphis Hospital Medical College	105	22.8	10	93	22.6	8	11	18.1	5	417	30.0	134
University of Michigan	97	6.2	26	78	1.3	22	21	23.8	15	403	8.9	73
Washington University	89	6.7	13	84	6.0	11	5	20.0	3	208	12.0	87
Tufts College Medical School	88	5.7	11	85	5.9	10	3	0.	2	286	10.1	67
Detroit College of Medicine	87	6.9	9	81	2.5	5	6	66.7	5	164	9.8	68
Keokuk Medical College, College of Physcicians and Surgeons	85	31.8	12	74	33.8	8	11	18.1	8	284	28.2	40
Hahnemann Medical College, Chicago	84	15.5	18	69	10.1	13	15	40.0	10	281	12.1	27
College of Physicians and Surgeons, Baltimore	84	17.8	20	77	15.6	16	7	42.8	7	379	21.6	58
University and Bellevue Hospital Medical College, New York	84	5.9	24	56	5.4	7	28	7.1	21	367	10.9	101
College of Physicians and Surgeons, St. Louis	82	53.6	13	77	54.5	12	5	40.0	4	190	35.3	84
George Washington University	80	23.7	15	76	25.0	13	4	0.	3	231	15.6	16
Johns Hopkins University	77	1.3	25	75	1.3	24	2	0.	2	250	1.2	50
University of Iowa	75	2.7	11	64	0.	7	7	14.3	5	320	6.2	43
University of Minnesota	74	12.2	8	70	12.8	9	4	0.	3	414	7.5	74
University of Nashville	74	24.3	17	68	23.5	14	6	33.3	6	199	19.6	130
College of Physicians and Surgeons, Atlanta	73	5.7	12	65	4.6	9	7	14.3	4	186	15.1	19
Long Island College Hospital	73	5.5	9	69	2.9	6	4	50.0	4	266	7.5	98
Bennett College of Eclectic Medicine and Surgery	72	9.7	13	67	8.9	11	5	20.0	4	147	15.0	24
Maryland Medical College	69	56.5	21	67	55.2	20	2	100.0	2	330	49.1	63
University of Louisville	67	29.8	24	46	17.4	19	21	57.1	13	182	34.6	51
University of Kansas	65	3.1	5	64	4.7	6	4	0.	2	65	3.0	45
Western Pennsylvania Medical College	64	18.7	4	61	19.7	2	3	0.	3	312	17.0	126
Cornell University	63	1.6	9	63	1.6	9	..	..	..	268	1.5	96
Hahnemann Medical College, Philadelphia	63	1.6	9	59	0.	8	4	25.0	4	222	2.7	129
Ensworth Central Medical College	61	45.9	8	60	46.7	7	1	0.	1	118	44.9	81
University Medical College, Kansas City	59	10.2	7	52	7.7	4	7	28.6	5	121	28.1	78
University of Vermont	59	11.9	13	51	5.9	9	8	50.0	6	297	15.2	146
Leonard School of Medicine	56	42.9	12	55	43.6	11	1	0.	1	166	49.4	104
Medical College of Virginia	56	8.9	9	55	9.1	9	1	0.	1	211	13.7	147
Creighton Medical College	55	23.6	8	53	20.8	8	2	100.0	1	145	13.8	90
Ohio Medical University	56	8.9	8	53	7.5	6	3	33.3	3	203	14.8	114
Medical College of Ohio	54	3.7	15	44	0.	11	10	20.0	7	176	7.4	111
Chattanooga Medical College	54	31.5	10	48	29.2	10	6	50.0	4	156	31.4	136
Kentucky School of Medicine	51	45.1	22	37	45.9	14	14	42.8	12	209	38.7	47
Boston University	51	13.7	14	39	15.4	11	12	8.3	7	151	11.3	64
Total Examined, Percentage and Averages	4,885	15.7	16	4,446	14.7	12	437	24.7*	6	16,748	14.6	

examined, of which number 21,830 passed and were registered and 5,165 (19.1 per cent.) failed. The numbers doubtless should be larger, since returns for 1903 and 1904 were not complete.

Table E (page 1781) gives the colleges grouped by states and shows in the first column the failures for recent graduates, in the second column the failures for graduates of 1901 or previous years, and in the third column the failures of graduates of all years. The first three columns are based on results of examinations held during 1906, while the fourth column shows the total examined and percentage of failures of all examined during the four years, 1903 to 1906, inclusive. The fifth column gives the rank of each state group of colleges according to the number of applicants. The eight states having the largest number of graduates examined by state boards are in their order: Illinois colleges 3,823, Pennsylvania 2,593, New York 2,468, Maryland 2,211, Tennessee 1,614, Missouri 1,493, Ohio 1,090 and Massachusetts 1,073. The sixth column of Table E gives the rank of each state group based on the failures before state boards. This is described further by Table I.

Table F, also based on the first four tables, allows us to study the larger colleges or those having 50 or more candidates examined in 1906. There were 147 colleges in all which had a total of 6,938 candidates examined by state boards. Sixteen colleges had over 100 candidates each, or a total of 2,504, and 50 had 50 or more candidates each with a total of 4,885.

Of the 16 largest schools—those having 100 or more examined—8 had less than 10 per cent. of failures, 3 had between 10 and 20, while 5 had failure percentages above 20, two of these having, respectively, 45.5 per cent. and 45.9 per cent. of failures.

Of those having between 50 and 100 candidates, 16 had less than 10 per cent. of failures, 7 had between 10 and 20, while 11 had over 20 per cent. Seven of these had over 30 per cent., these having 31.5, 31.8, 42.9, 45.1, 45.9, 53.6 and 56.5 per cent. of failures.

Of the 50 schools, therefore, having 50 or more candidates examined, 24 had less than 10 per cent. of failures,

TABLE G.—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE B.

College.	Total Examined.	Results in Home State. Passed.	Failed.	Per cent Failed.	Results in Other States Passed.	Failed.	Per cent Failed.
ALABAMA ..... —	**41**	**34**	**0**	**0.**	**7**	**0**	**0.**
Birmingham Medical College..	13	10	0	0.	3	0	0.
Medical College of Alabama...	28	24	0	0.	4	0	0.
ARKANSAS..... + 33.3	**8**	**5**	**0**	**0.**	**2**	**1**	**33.3**
University of Arkansas.....	8	5	0	0.	2	1	33.3
CALIFORNIA..... — 0.1	**127**	**97**	**14**	**12.6**	**14**	**2**	**12.5**
Cooper Medical College.....	34	31	1	3.1	2	0	0.
University of California.....	21	18	1	5.3	1	1	50.0
California Medical College.....	4	1	3	75.0	...	..	....
Hahnemann Medical College...	5	5	0	0.	...	..	....
Coll. of P. and S., San Fran..	26	14	3	17.7	8	1	11.1
Oakland Coll . of M. and S....	4	4	0	0.	...	..	....
Univ. of Southern California..	29	20	6	23.1	3	0	0.
Coll. of P. and S., Los Angeles	4	4	0	0.	...	..	....
COLORADO* ..... —	**18**	...	..	....	**13**	**5**	**27.8**
Denver and Gross.....	13	...	..	....	9	4	30.8
Denver Homeo. Med. College..	1	...	..	....	0	1	100.0
University of Colorado.....	4	...	..	....	4	0	0.
CONNECTICUT .....—	**21**	**10**	**0**	**0.**	**11**	**0**	**0.**
Yale Medical College.....	21	10	0	0.	11	0	0.
DIST. OF COLUMBIA... —26.0	**146**	**46**	**27**	**37.0**	**65**	**8**	**11.0**
George Washington Univ.....	76	30	16	34.8	27	3	10.0
Georgetown University.....	36	11	7	38.9	16	2	11.1
Howard University	34	5	4	44.4	22	3	12.0
GEORGIA ..... + 13.9	**141**	**103**	**4**	**3.7**	**28**	**6**	**17.6**
College of P. and S., Atlanta.	65	49	2	3.9	13	1	7.2
Georgia Eclectic Med. Coll.....	19	13	0	0.	5	1	16.7
University of Georgia.....	37	29	2	6.5	3	4	57.1
Atlanta School of Medicine....	20	12	0	0.	7	0	0.
ILLINOIS..... + 6.9	**898**	**560**	**33**	**5.6**	**267**	**38**	**12.5**
American Medical Miss. Coll..	23	8	0	0.	14	1	6.7
Bennett Medical College.....	67	43	2	4.4	18	4	18.2
College of Med. and Surgery.	9	3	4	57.1	1	1	50.0
Coll. of P. and S., Chicago....	259	165	6	3.5	77	11	12.5
Hahnemann Med. C., Chicago.	69	49	5	9.3	13	2	13.3
Hering Medical College.....	14	3	3	50.0	5	3	37.5
Illinois Medical College.....	43	19	1	5.0	18	5	21.8
Jenner Medical College.....	36	30	5	14.3	1	0	0.
Northwestern University	157	105	1	1.0	49	2	3.9
Rush Medical College.....	135	70	0	0.	62	3	4.6
National Medical University....	15	13	0	0.	0	2	100.0
American Coll. of M. and S...	34	22	1	4.4	8	3	27.3
Dearborn Medical College.....	37	30	5	14.3	1	1	50.0
INDIANA..... + 18.2	**148**	**123**	**9**	**6.8**	**12**	**4**	**25.0**
Indiana Medical College.....	136	112	8	6.7	12	4	25.0
Physio-Med. of Indiana.....	6	6	0	0.	...	..	....
Eclectic Medical Coll. of Ind.	6	5	1	16.7	...	..	....
IOWA..... + 15.1	**167**	**122**	**22**	**15.3**	**16**	**7**	**30.4**
Drake University.....	12	9	0	0.	3	0	0.
Keokuk Med. C. of P. and S.	74	43	18	29.5	6	7	53.8
Sioux City Coll of Medicine...	17	12	4	33.3	1	0	0.
University of Iowa (H).....	...	...	..	....	...	..	....
University of Iowa (R).....	64	58	0	0.	6	0	0.
KANSAS..... + 13.3	**81**	**66**	**0**	**0.**	**13**	**2**	**13.3**
Kansas Medical College.....	17	17	0	0.	...	..	....
University of Kansas.....	64	49	0	0.	13	2	13.3
KENTUCKY** ..... + 17.4	**214**	**25**	**6**	**19.4**	**123**	**60**	**36.8**
Hospital Coll. of Medicine....	37	4	2	33.3	22	9	29.0
Kentucky School of Medicine.	37	7	1	12.5	13	16	55.2
Louisville Medical College.....	43	2	0	0.	30	11	26.9
Louisville National Med. Coll.	...	...	..	....	...	..	....
Southern Homeo. Med. Coll...	4	...	..	....	1	3	75.0
University of Louisville.....	46	9	2	18.1	29	6	17.1
Kentucky University.....	47	3	1	25.0	28	15	35.0
LOUISIANA ..... + 12.7	**132**	**72**	**6**	**7.7**	**43**	**11**	**20.4**
Flint Medical College.....	24	9	6	40.0	2	7	77.8
Tulane University.....	108	63	0	0.	41	4	8.9
MAINE..... —	**21**	**16**	**0**	**0.**	**5**	**0**	**0.**
Medical School of Maine.....	21	16	0	0.	5	0	0.
MARYLAND..... — 1.5	**503**	**93**	**36**	**27.9**	**275**	**99**	**26.4**
Baltimore Medical College.....	144	17	8	32.0	88	31	26.1
Baltimore University.....	35	0	3	100.0	10	22	68.7
College of P. & S., Baltimore.	77	9	4	30.8	56	8	12.5
Johns Hopkins Med. School..	75	18	0	0.	56	1	1.8
So. Homeopathic Med. Coll...	3	...	..	....	1	2	66.7
University of Maryland.....	101	44	9	17.0	38	10	20.8
Woman's Medical College.....	1	...	..	....	1	0	0.
Maryland Medical College.....	67	5	12	70.6	25	25	50.0
MASSACHUSETTS..... + 6.4	**258**	**138**	**11**	**7.4**	**94**	**15**	**13.8**
Boston University	39	20	3	13.0	13	3	18.7
College of P. and S., Boston.	30	8	4	33.3	10	8	44.4
Harvard University	104	53	1	1.9	48	2	4.0
Tufts Medical College.....	85	57	3	5.0	23	2	8.0
MICHIGAN..... + 2.8	**202**	**144**	**1**	**0.7**	**55**	**2**	**3.5**
Detroit College of Medicine....	81	71	1	1.4	8	1	11.1
Detroit Homeo. Med. College..	7	7	0	0.	...	..	....
Michigan Coll. of M. and S....	12	9	0	0.	3	0	0.
Grand Rapids Med. Coll.....	6	4	0	0.	2	0	0.
University of Michigan (R)....	78	40	0	0.	37	1	2.6
University of Michigan (H)....	18	13	0	0.	5	0	0.

College.	Total Examined.	Results in Home State. Passed.	Failed.	Per cent. Failed.	Results in Other States Passed.	Failed.	Per cent. Failed.
MINNESOTA..... — 12.4	**115**	**66**	**19**	**22.4**	**27**	**3**	**10.0**
University of Minnesota (H)..	2	1	0	0.	1	0	0.
University of Minnesota (R)..	70	42	8	16.0	19	1	5.0
Hamline University	43	23	11	32.4	7	2	22.2
MISSOURI..... —21.4	**645**	**158**	**125**	**44.1**	**280**	**82**	**22.7**
Univ. M. C., Kansas City...	52	15	2	11.8	33	2	5.7
Kansas City Hahne. M. C.....	7	...	..	....	6	1	14.3
Eclectic Medical University...	16	2	7	77.8	5	2	28.6
Ensworth Central Med. Coll.	60	5	14	73.7	27	14	34.2
Barnes Medical College.....	125	21	29	58.0	47	28	37.4
St. Louis University.....	196	57	39	40.6	84	16	16.0
Coll. of P. and S., St. Louis..	77	8	25	75.8	27	17	38.6
American Medical College.....	14	6	3	33.3	4	1	20.0
Homeo. College of Missouri...	3	0	1	100.0	1	1	50.0
Washington University.....	84	37	5	11.9	42	0	0.
University of Missouri.....	11	7	0	0.	4	0	0.
NEBRASKA..... —13.7	**90**	**41**	**17**	**29.3**	**27**	**5**	**15.6**
University of Nebraska.....	20	7	7	50.0	5	1	16.7
Creighton Medical College.....	53	27	10	27.0	15	1	6.3
Lincoln Medical College.....	17	7	0	0.	7	3	30.0
NEW HAMPSHIRE..... —10.0	**20**	**8**	**2**	**20.0**	**9**	**1**	**10.0**
Dartmouth Medical College....	20	8	2	20.0	9	1	10.0
NEW YORK..... + 4.7	**536**	**433**	**15**	**3.3**	**81**	**7**	**8.8**
Albany Medical College.....	37	31	1	3.1	5	0	0.
Coll. of P. and S., New York.	180	141	5	3.5	32	2	5.9
Cornell University.....	63	53	1	1.9	9	0	0.
Eclectic Med. Coll., New York	16	13	0	0.	1	2	66.7
Long Island College Hospital.	69	58	1	1.7	9	1	10.0
New York Homeo. Med. Coll..	35	28	1	3.4	5	1	16.7
N. Y. Woman's Med. Coll....	8	8	0	0.	...	..	....
University and Bellevue M. C.	56	39	3	7.1	14	0	0.
Syracuse University.....	25	24	1	4.0	...	..	....
University of Buffalo.....	47	38	2	5.0	6	1	14.3
NORTH CAROLINA..... + 7.5	**100**	**32**	**13**	**28.9**	**35**	**20**	**36.4**
Leonard Medical College.....	55	3	4	57.1	28	20	41.7
North Carolina Med. College..	32	21	6	22.2	5	0	0.
University of North Carolina..	13	8	3	27.3	2	0	0.
OHIO..... + 8.5	**269**	**177**	**8**	**4.3**	**12**	**12**	**12.8**
Western Reserve University..	20	20	0	0.	...	..	....
Cleveland Coll. of P. and S...	24	19	0	0.	4	1	20.0
Cleveland Homeo. Med. Coll..	15	11	0	0.	3	1	25.0
Eclectic Medical Institute.....	40	8	1	11.1	25	6	19.4
Medical College of Ohio.....	44	27	0	0.	17	0	0.
Pulte Medical College.....	2	...	..	....	1	1	50.0
Miami Medical College.....	27	19	0	0.	8	0	0.
Ohio Medical University.....	53	43	2	4.4	6	2	25.0
Starling Medical College.....	33	25	4	13.8	3	1	25.0
Toledo Medical College.....	11	5	1	16.7	5	0	0.
OREGON..... —39.0	**49**	**16**	**23**	**59.0**	**8**	**2**	**20.8**
University of Oregon.....	28	13	8	38.1	7	0	0.
Willamette University	21	3	15	83.3	1	2	66.7
PENNSYLVANIA..... —2.9	**629**	**384**	**34**	**8.1**	**200**	**11**	**5.2**
Temple College	13	12	0	0.	1	0	0.
University of Pennsylvania....	129	71	3	4.1	55	0	0.
Hahn. M. C. of Philadelphia..	59	43	0	0.	16	0	0.
Jefferson Medical College.....	218	116	12	9.4	81	9	10.0
Woman's M. C. Pennsylvania.	37	16	1	5.9	20	0	0.
Medico-Chirurgical Coll., Pa..	112	77	7	8.3	27	1	3.6
Western Pennsylvania M. C..	61	49	11	21.6	0	1	100.0
SOUTH CAROLINA..... + 17.3	**17**	**12**	**1**	**7.7**	**3**	**1**	**25.0**
Med. Coll. of South Carolina.	17	12	1	7.7	3	1	25.0
TENNESSEE..... + 4.2	**444**	**75**	**32**	**29.9**	**222**	**115**	**34.1**
Tennessee Medical College.....	23	13	4	23.5	1	5	83.3
Knoxville Medical College.....	3	...	..	....	1	2	66.7
University of Nashville.....	68	11	8	42.1	41	8	16.3
Vanderbilt University	29	5	0	0.	23	1	4.2
University of Tennessee.....	33	7	4	36.3	12	10	45.5
Meharry Medical College.....	107	6	7	53.8	52	42	44.7
Memphis Medical College.....	93	19	1	5.0	53	20	27.4
University of South.....	38	0	2	100.0	19	17	47.2
Chattanooga Medical College..	48	14	5	26.3	20	9	31.0
University of West Tennessee.	2	0	1	100.0	0	1	100.0
TEXAS..... + 16.5	**64**	**44**	**5**	**10.2**	**11**	**4**	**26.7**
Fort Worth University.....	14	12	0	0.	2	0	0.
University of Texas.....	19	17	0	0.	2	0	0.
Baylor University.....	11	8	0	0.	2	1	33.3
Physio-Med. College of Texas.	2	...	..	....	2	0	0.
Gate City Medical College.....	4	2	0	0.	0	2	100.0
Southwestern University.....	6	5	1	16.7	...	..	....
Coll. of P. and S., Dallas.....	8	0	4	100.0	3	1	25.0
VERMONT ..... + 13.6	**51**	**29**	**0**	**0.**	**19**	**3**	**13.6**
University of Vermont.....	51	29	0	0.	19	3	13.6
VIRGINIA..... + 3.4	**123**	**59**	**3**	**4.8**	**56**	**5**	**8.2**
Medical College of Virginia....	55	32	2	5.9	18	3	14.3
Univ. College of Medicine.....	31	16	1	5.9	13	1	7.2
University of Virginia.....	37	11	0	0.	25	1	3.8
WISCONSIN ..... + 24.6	**32**	**24**	**1**	**4.0**	**5**	**2**	**28.6**
Milwaukee Medical College....	17	11	0	0.	4	2	33.3
Coll. of P. and S., Wisconsin.	15	13	1	7.2	1	0	0.
+ 7.6	6,310	3,212	467	12.7	2,098	533	20.3

*Graduates registered in home state without examinations.
**Most graduates registered in home state without examination.

Heavy-faced figures show totals by states.

10 had between 10 and 20 per cent., while 16 had over 20 per cent. Nine colleges had over 30 per cent. of failures. This is a serious showing because of the fact that these are large colleges and turn out large classes of graduates.

The third column gives the number of states in which each college had graduates appear for examination. Jefferson leads, its graduates appearing in 36 states; University of Pennsylvania comes next, being represented in 28 states. Then comes the College of Physicians and Surgeons of Chicago, in 27 states, University of Michigan in 26 states, Johns Hopkins in 25, Rush Medical College, the University and Bellevue Hospital Medical College and the University of Louisville, each in 24.

The fourth, fifth and sixth columns give the results for graduates of 1901 to 1906, while the seventh, eighth and ninth columns give the results for graduates of 1900 and previous years. The results for the examinations held during 1903 to 1906, inclusive, taken from Table D, have been added. By comparing the percentage of failures of this last column with those of the second column it can be noted whether the percentage for 1906 is higher or lower than the average of the school for the four years, 1903 to 1906, or, in other words, whether or not the college is making a better showing before state boards. The following table gives a comparison of the results in 1906 with those of previous years:

COMPARISON WITH PREVIOUS YEARS (FROM TABLE F).

Year.	Schools Having Candidates.	Total Candidates.	Percentage Failed.	Schools, 100 or more candidates.	Total Candidates.	Percentage Failed.	Schools, 50 or more candidates.	Total Candidates.	Percentage Failed.	Schools less than 50 candidates.	Total Candidates.	Percentage Failed.	Foreign and Undergrad. Candidates.	Percentage Failed.
1904	149	6241	16.4	14	2271	11.7	42	4088	14.0	107	2153	21.0	794	43.1
1905	153	6411	18.3	14	2350	12.4	51	4893	15.1	102	1518	28.9	759	41.1
1906	146	6938	17.3	16	2504	14.5	50	4885	15.7	96	2043	21.3	1097	42.5

Of the 146 colleges having candidates applying for license, 16 had 100 or more, and 34 had between 50 and 100, making 50 schools having 50 or more candidates, leaving 90 schools having less than 50. These are shown separately in the above table to call attention to any differences in the percentage of failures. Graduates of foreign colleges and undergradutes are shown in the last two columns. The apparent increase in the total for 1906 is partly due to incomplete data for previous years.

In making comparisons between schools, to insure greater accuracy a number of points must be carefully considered. Besides the percentage of failures, one must consider the number examined and the number of state boards before which graduates of the college appeared for examination. The general severity of the examination must be particularly considered, since it is shown by the tables that states differ considerably in this respect.

It should be noted that these tables show instances of success and failure rather than the number of individuals.

Table G is based on the examination of graduates of 1901 to 1906, inclusive, i. e., recent graduates. Graduates examined in the state in which the college is located are grouped in one column, while graduates of that college examined in other states are in another column. This shows the number of graduates who stay in the state in which the college is located; it also shows what is evidently a fact, that, as a rule, the graduates of a certain

TABLE H.—PHYSICIANS EXAMINED BY STATE BOARDS, 1903 TO 1906 INCLUSIVE.

State.	1903		1904		1905		1906		Total Examined.	Registered.	Rejected.	Percentage Rejected.
	Registered.	Rejected.	Registered.	Rejected.	Registered.	Rejected.	Registered.	Rejected.				
Alabama	...	...	118	20	131	22	138	22	451	387	64	14.2
Arizona	...	...	28	7	35	7	35	4	116	98	18	15.5
Arkansas	18	0	115	37	88	5	152	73	541	373	168	31.1
California	152	74	216	80	144	127	190	44	1,027	702	325	31.6
Connecticut	128	23	67	26	66	17	84	28	439	345	94	21.4
Delaware	7	4	10	1	20	8	11	1	62	48	14	22.5
District of Columbia.	46	13	78	14	67	23	63	34	338	254	84	24.9
Florida	...	...	...	...	24	3	66	7	100	90	10	10.0
Georgia	73	12	110	4	...	...	164	5	368	347	21	5.7
Idaho	31	14	23	16	46	15	42	12	199	142	57	28.6
Illinois	559	35	728	34	759	36	748	69	2,968	2,794	174	5.9
Indiana	141	16	150	24	249	63	228	12	883	768	115	13.0
Iowa	273	40	238	52	205	30	160	29	1,033	882	151	14.6
Kansas	45	5	64	13	163	29	180	27	524	450	74	14.1
Kentucky	...	...	4	6	38	4	52	13	117	94	23	19.7
Louisiana	132	24	120	20	105	15	133	14	563	490	73	13.0
Maine	73	0	66	8	68	3	80	8	306	287	19	6.2
Maryland	102	40	121	66	120	75	112	44	680	455	225	33.1
Massachusetts	263	43	320	77	274	63	270	120	1,430	1,127	303	21.2
Michigan	19	2	52	1	82	5	162	6	329	315	14	4.3
Minnesota	163	43	134	27	124	39	104	31	665	525	140	21.1
Mississippi	17	8	119	130	113	138	156	144	825	405	420	50.9
Missouri	...	...	...	...	...	...	249	193	442	249	193	43.7
Montana	...	...	21	10	31	17	24	25	128	76	52	40.6
Nebraska	...	...	93	7	87	29	58	25	299	238	61	20.4
Nevada	...	...	2	0	...	...	2	0	4	4	0	0.
New Hampshire	29	4	33	9	15	5	34	17	146	111	35	24.0
New Jersey	...	...	76	20	55	17	80	13	261	211	50	19.2
New Mexico	...	...	9	2	...	...	...	...	11	9	2	18.1
New York	633	55	667	62	705	51	629	56	2,858	2,634	224	7.8
North Carolina	77	26	74	19	92	40	87	41	456	330	126	27.6
North Dakota	60	14	54	13	72	7	60	10	290	246	44	15.2
Ohio	98	6	236	13	213	8	222	16	812	769	43	5.3
Oklahoma	19	19	30	36	53	28	95	28	308	197	111	36.0
Oregon	32	3	70	6	68	6	65	56	366	235	131	35.8
Pennsylvania	37	51	460	121	540	98	519	73	2,199	1,856	343	15.6
Rhode Island	52	15	52	5	47	19	54	30	274	205	69	25.2
South Carolina	47	4	49	6	44	22	39	13	224	179	45	20.1
South Dakota	17	3	36	12	41	11	26	11	157	120	37	23.6
Tennessee	78	6	166	107	86	35	150	96	724	480	244	33.7
Texas	116	21	96	87	117	73	159	53	722	488	234	32.4
Utah	30	3	31	7	32	8	37	7	155	130	25	16.1
Vermont	42	4	54	1	43	1	35	0	180	174	6	3.3
Virginia	134	39	121	54	140	50	123	55	696	518	178	25.6
Washington	115	23	135	46	141	34	137	45	676	528	148	21.9
West Virginia	102	16	163	40	109	95	84	72	681	458	223	32.7
Wisconsin	54	7	60	7	95	5	52	2	282	261	21	7.4
Wyoming	...	...	...	...	12	1	12	3	28	24	4	14.3
Totals	5,027		7,022		7,259		8,035		27,343	.....	.....	.....
Registered	4,312		5,669		5,759		6,768		.....	22,108	.....	.....
Rejected	715		1,353		1,500		1,667		.....	.....	5,235	.....
Percent. Reg.	14.2		19.3		20.7		20.7		.....	.....	.....	19.1

school have a much better chance of passing the examination in the state in which the school is located than they have elsewhere. This should always be considered in making comparisons between colleges. A college having an exceedingly low standard, by having its graduate all locate in the home state, may thus show a lower percentage of failures than a college of much higher grade which has graduates examined by several states.

The heavy-faced figures give the results by states. The first column of heavy-faced figures shows the differ-

ences between the percentages of home colleges and of colleges of other states. The plus sign indicates that colleges of other states have the larger percentage of rejections; the minus sign indicates that the home colleges have had the greater percentage rejected. Colorado and Kentucky registered without examination all or most of the graduates of their own schools.

Table H shows the number examined in each state for the four years, 1903 to 1906, inclusive, giving the number who were registered and the number rejected each year, as well as the totals for the four years. This shows that at least 27,343 candidates were examined, of which 22,108 were registered and 5,235, 19.1 per cent., were rejected. Therefore, a candidate coming up for examination has had four chances out of five of passing his examination.

Table I gives a classification of the colleges grouped by states, based on state board examinations for the four years, 1903 to 1906. This shows the total number examined from the colleges of each state, the number who passed, the number who failed and the percentage of failures. The state groups are arranged in order of this percentage of failures, the one having the lowest percentage being placed first. They are also separated into groups representing those having less than 10 per cent. of failures, those between 10 and 20 and those above 20 per cent.

TABLE I.—COLLEGES GROUPED BY STATES, CLASSIFIED ON THE BASIS OF REJECTIONS BY STATE EXAMINING BOARDS FOR YEARS 1903 TO 1906 INCLUSIVE.

Colleges of	Total Examined.	Passed.	Failed.	Per cent. failed.
Having less than 10 per cent. of failures.				
Connecticut	138	134	4	2.9
New York	2,468	2,327	141	5.7
Kansas	117	108	9	7.7
Alabama	142	130	12	8.5
Pennsylvania	2,593	2,366	227	8.8
Massachusetts	1,073	977	96	8.9
Maine	112	102	10	8.9
Illinois	3,823	3,461	362	9.5
Michigan	656	594	62	9.5
Totals	11,122	10,199	923	8.3
Having between 10 and 20 per cent. of failures.				
Virginia	579	521	58	10.0
South Carolina	99	86	13	13.1
Texas	163	141	22	13.5
New Hampshire	87	75	12	13.8
Louisiana	433	373	60	13.9
Minnesota	587	504	83	14.1
Colorado*	96	82	14	14.6
Georgia	336	286	50	14.9
Vermont	297	252	45	15.2
Wisconsin	92	78	14	15.2
Iowa	762	643	119	15.6
Arkansas	19	16	3	15.8
Ohio	1,090	909	181	16.6
Indiana	371	306	65	17.5
Nebraska	337	270	67	19.9
Totals	5,348	4,542	806	11.8
Having above 20 per cent. of failures.				
District of Columbia	500	400	100	20.0
California	574	455	119	20.7
Maryland	2,211	1,594	617	27.9
Missouri	1,493	1,064	429	28.6
Tennessee	1,614	1,081	533	33.0
North Carolina	291	189	102	35.0
Kentucky*	854	553	301	35.2
Oregon	128	77	51	39.8
Totals	7,665	5,413	2,252	29.4
Grand totals	24,135	20,154	3,981	16.5

*Graduates of Colorado and Kentucky schools exempt from examination in their home states.

In Tables J, K, L and M the colleges have been classified according to the percentages of failures. These figures have been drawn from Table B and are, therefore, based on the results obtained by recent graduates. Table J shows the colleges receiving less than 10 per cent.; Table K shows those receiving from 10 to 20 per cent., and Table L shows those obtaining 20 per cent. of

TABLE J.—COLLEGES HAVING LESS THAN 10 PER CENT OF FAILURES BEFORE STATE BOARDS IN 1906.
BASED ON TABLE B.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
ALABAMA.					
Birmingham Medical College	13	13	0	0.	2
Medical College of Alabama	28	28	0	0.	3
CALIFORNIA.					
Cooper Medical College	34	33	1	2.9	2
University of California	21	19	2	9.5	3
COLORADO.					
Colorado School of Medicine	4	4	0	0.	1
CONNECTICUT.					
Yale University Medical School	21	21	0	0.	6
GEORGIA.					
Atlanta College of Phys. and Surg.	65	62	3	4.6	9
Georgia Coll. of Eclectic Med. and Surg.	19	18	1	5.3	1
Atlanta School of Medicine	20	19	1	5.0	5
ILLINOIS.					
American Medical Missionary College	23	22	1	4.4	14
Bennett Coll. of Eclectic Med. and Surg.	67	61	6	8.9	11
College of Physicians and Surgeons	259	242	17	6.6	24
Northwestern Univ. Medical School	157	154	3	1.9	18
Rush Medical College	135	132	3	2.2	20
INDIANA.					
Indiana Medical College	136	124	12	8.8	13
IOWA.					
Drake University	12	12	0	0.	4
State University of Iowa (R)	64	64	0	0.	7
KANSAS.					
Kansas Medical College	17	17	0	0.	1
University of Kansas	64	62	2	3.1	5
LOUISIANA.					
Tulane University	108	104	4	3.7	14
MAINE.					
Medical School of Maine	21	21	0	0.	1
MARYLAND.					
Johns Hopkins Medical School	75	74	1	1.3	24
MASSACHUSETTS.					
Harvard University Medical School	104	101	3	2.9	15
Tufts College Medical School	85	80	5	5.9	10
MICHIGAN.					
Detroit College of Medicine	81	79	2	2.5	5
Michigan College of Med. and Surg.	12	12	0	0.	4
Grand Rapids Medical College	6	6	0	0.	1
University of Michigan (R)	78	77	1	1.3	22
University of Michigan (H)	18	18	0	0.	6
MISSOURI.					
University Medical College	52	48	4	7.7	4
Washington University	84	79	5	6.0	11
University of Missouri	11	11	0	0.	5
NEW YORK.					
Albany Medical College	37	36	1	2.7	5
College of Physicians and Surgeons	180	173	7	3.9	15
Cornell University	63	62	1	1.6	9
Long Island College Hospital	69	67	2	2.9	6
New York Homeopathic Med. Coll.	35	33	2	5.7	7
University and Bellevue Med. Coll.	56	53	3	5.4	7
Syracuse University	25	24	1	4.0	1
University of Buffalo	47	44	3	6.4	6
OHIO.					
Western Reserve University	20	20	0	0.	1
Cleveland College of Phys. and Surgs.	24	23	1	4.2	5
Cleveland Homeopathic Med. Coll.	15	14	1	6.7	5
Medical College of Ohio	44	44	0	0.	11
Miami Medical College	27	27	0	0.	7
Ohio Medical University	53	49	4	7.5	6
Toledo Medical College	11	10	1	9.1	3
PENNSYLVANIA.					
Temple Medical College	13	13	0	0.	2
University of Pennsylvania	129	126	3	2.3	24
Hahnemann Med. Coll. of Philadelphia	59	59	0	0.	8
Jefferson Medical College	218	197	21	9.6	31
Woman's Med. Coll. of Pennsylvania	37	36	1	2.7	11
Medico-Chirurgical College	112	104	8	7.1	13
TENNESSEE.					
Vanderbilt University	29	28	1	3.4	12
TEXAS.					
Fort Worth University	14	14	0	0.	3
University of Texas	19	19	0	0.	3
Baylor University	11	10	1	9.1	2
VERMONT.					
University of Vermont	51	48	3	5.9	9
VIRGINIA.					
Medical College of Virginia	55	50	5	9.1	9
University College of Medicine	31	29	2	6.5	9
University of Virginia	37	36	1	2.7	18
WISCONSIN.					
Wisconsin College of Phys. and Surg.	15	14	1	6.7	2
Totals	3,430	3,279	151	4.4	..

failures and over. In Table M have been placed all the colleges regarding which the data was insufficient to allow of fair comparison.

There are 62 colleges listed in Table I; of these, 19 have no failures, 21 had from 1 to 5 per cent. failures, and 22 had from 5 to 10 per cent. In Table K, 24 colleges are listed, 13 having between 10 and 15 per cent. of failures and 10 which have between 15 and 20 per cent. of failures. In Table L, 43 colleges are listed, 15 having from 20 to 30 per cent. of failures, 5 having from 30 to 40 per cent., 11 having from 40 to 50 per cent., and 11 which have over 50 per cent. of failures.

Table N shows the total registration by the various state boards during 1906. The first three columns give those registered after passing a written examination, showing the number of recent graduates, graduates of 1901 or previous years and undergraduates. In the same column with the undergraduates are listed a few graduates for whom the year of graduation had not been recorded. The fourth column shows the number licensed through reciprocity, while the fifth column shows those licensed by other methods than the written examination, or under exemption clauses in the practice acts. The last column gives the total registration in each state.

The three states leading in the number of registrations are: Illinois 791, New York 732 and Pennsylvania 519. No other state registers as high as 300, Missouri the fourth in order, registering 295. Eight states register between 200 and 300 each.

The influence of reciprocity is seen in a comparison of the second column (graduates of 1901 or previous years) with the fourth column. As would be expected, the larger numbers taking examination are found in those states not having provision for reciprocity. There were 329 non-graduates who received license to practice last year. The total registration was 7,865.

Our endeavor in the publication of these statistics has been to give an absolutely fair presentation of facts as they exist. A knowledge of such facts is always beneficial, and we trust this exposition of the results of the examination of applicants for license to practice medicine in the United States will help in the advancement of medical education in this country. We wish to acknowledge our indebtedness to the state licensing boards whose ready cooperation and complete reports have made the publication of this data possible.

TABLE K.—COLLEGES HAVING BETWEEN 10 AND 20 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1906.
BASED ON TABLE B.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
ARKANSAS.					
Arkansas University	8	7	1	12.5	4
CALIFORNIA.					
College of Physicians and Surgeons	26	22	4	15.4	5
GEORGIA.					
Medical College of Georgia	37	32	5	13.5	3
ILLINOIS.					
Hahnemann Medical College	69	62	7	10.1	13
Illinois Medical College	43	37	6	14.0	14
Jenner Medical College	36	31	5	13.9	2
National Medical University	15	13	2	13.3	3
American College of Med. and Surg	34	30	4	11.8	8
Dearborn Medical College	37	31	6	16.2	5
KENTUCKY.					
University of Louisville	46	38	8	17.4	19
MARYLAND.					
College of Physicians and Surgeons	77	65	12	15.6	16
University of Maryland	101	82	19	18.8	21
MASSACHUSETTS.					
Boston University	39	33	6	15.4	11
MINNESOTA.					
University of Minnesota (R)	70	61	9	12.8	9
MISSOURI.					
Kansas City Hahnemann Med. Coll	7	6	1	14.3	3
NEBRASKA.					
Lincoln Medical College	17	14	3	17.7	4
NEW HAMPSHIRE.					
Dartmouth Medical College	20	17	3	15.0	6
NEW YORK.					
Eclectic Medical Coll. of New York	16	14	2	12.5	3
NORTH CAROLINA.					
North Carolina Medical College	32	26	6	18.7	6
OHIO.					
Eclectic Medical Institute	40	33	7	17.5	11
Starling Medical College	33	28	5	15.2	3
PENNSYLVANIA.					
Western Pennsylvania Medical College	61	49	12	19.7	7
SOUTH CAROLINA.					
Medical College of South Carolina	17	15	2	11.8	5
WISCONSIN.					
Milwaukee Medical College	17	15	2	11.8	6
Totals	898	761	137	15.3	

TABLE L.—COLLEGES HAVING OVER 20 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1906.
BASED ON TABLE B.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
CALIFORNIA.					
University of Southern California	29	23	6	23.3	1
COLORADO.					
Denver and Gross College of Medicine	13	9	4	30.8	1
DISTRICT OF COLUMBIA.					
George Washington University	76	57	19	25.0	13
Georgetown University	36	27	9	25.0	13
Howard University	34	27	7	20.6	15
ILLINOIS.					
College of Med. and Surg. (Ph.M.)	9	4	5	55.5	1
Hering Medical College	14	8	6	42.8	6
IOWA.					
Keokuk Medical Coll., Coll of P. and S.	74	49	25	33.8	1
Sioux City College of Medicine	17	13	4	23.5	1
KENTUCKY.					
Hospital College of Medicine	37	26	11	29.7	14
Kentucky School of Medicine	37	20	17	45.9	14
Louisville Medical College	43	32	11	25.6	15
Southwest. Homeopathic Med. Coll	4	1	3	75.0	3
Kentucky University	47	31	16	34.0	21
LOUISIANA.					
Flint Medical College	24	11	13	54.2	1
MARYLAND.					
Baltimore Medical College	144	105	39	27.0	20
Baltimore University	35	10	25	71.4	11
Maryland Medical College	67	30	37	55.2	20
MASSACHUSETTS.					
College of Physicians and Surgeons	30	18	12	40.0	6
MINNESOTA.					
Hamline University	43	30	13	30.2	1
MISSOURI.					
Eclectic Medical University	16	7	9	56.2	1
Ensworth Central Medical College	60	32	28	46.7	7
Barnes Medical College	125	68	57	45.6	16
St. Louis University	196	141	55	28.0	16
St. Louis Coll. of Phys. and Surg	77	35	42	54.5	12
American Medical College	14	10	4	28.6	6
Homeopathic Medical College	3	1	2	66.7	1
NEBRASKA.					
University of Nebraska	20	12	8	40.0	6
Creighton Medical College	53	42	11	20.8	8
NORTH CAROLINA.					
Leonard School of Medicine	55	31	24	43.6	11
University of North Carolina	13	10	3	23.1	3
OREGON.					
University of Oregon	28	20	8	28.6	3
Willamette University	21	4	17	81.0	3
TENNESSEE.					
Tennessee Medical College	23	14	9	39.1	4
Knoxville Medical College	3	1	2	66.7	2
University of Nashville	68	52	16	23.5	14
University of Tennessee	33	19	14	42.4	9
Meharry Medical College	107	58	49	45.7	19
Memphis Hospital Medical College	93	72	21	22.6	8
University of the South	38	19	19	50.0	17
Chattanooga Medical College	48	34	14	29.2	10
TEXAS.					
Gate City Medical College	4	2	2	50.0	1
College of Physicians and Surgeons	8	3	5	62.5	4
Totals	1,919	1,218	701	36.5	..

TABLE M.—UNCLASSIFIED COLLEGES.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
CALIFORNIA.					
Hahnemann Medical College	5	5	0	0.	1
California Medical College	4	1	3	75.0	1
Oakland College of Med. and Surg.	4	4	0	0.	1
College of Phys. and Surg., Los Angeles.	4	4	0	0.	1
COLORADO.					
Denver Homeopathic Medical College	1	0	1	100.0	1
INDIANA.					
Physio-Medical College of Indiana	6	6	0	0.	1
Eclectic Medical College of Indiana	6	5	1	16.7	1
IOWA.					
Univ. of Iowa, Homeopathic Dept.	..	..	..	.....	..
KENTUCKY.					
Louisville National Medical College	..	..	..	....	..
MARYLAND.					
Southern Homeopathic Medical College	3	1	2	66.7	1
Woman's Medical College	1	1	0	0.	1
MICHIGAN.					
Detroit Homeopathic Medical College	7	7	0	0.	1
MINNESOTA.					
Univ. of Minnesota, Homeopathic Dept.	2	2	0	0.	2
MISSISSIPPI.					
Mississippi Medical College	..	..	..	.....	..
NEW YORK.					
New York Med. Coll. for Women	8	8	0	0.	1
OHIO.					
Pulte Medical College	2	1	1	50.0	1
TENNESSEE.					
University of West Tennessee	2	0	2	100.0	2
College of Phys. and Surg., Memphis	..	..	..	.....	..
TEXAS.					
Physio-Medical College of Texas	2	2	0	0.	1
Southwestern University	6	5	1	16.7	1
Totals	63	52	11	17.5	..

TABLE N.—REGISTRATIONS BY STATE BOARDS DURING 1906.

States.	By Examination.			By Reciprocity.	Without written exam. or under exemptions.	Totals.
	1901-6	1900 and previous.	Non-grads. and Miscel.			
Alabama	114	12	12	..	..	138
Arizona	21	13	1	..	..	35
Arkansas	37	36	79	..	4	156
California	144	46	..	..	..	190
Colorado	...	..	..	..	168	168
Connecticut	66	18	..	8	..	92
Delaware	11	..	..	5	..	16
District of Columbia	59	4	..	11	..	74
Florida	44	22	..	..	2	68
Georgia	157	7	..	6	4	174
Idaho	28	14	..	..	1	43
Illinois	731	17	..	43	..	791
Indiana	216	12	..	21	..	249
Indian Territory	...	..	..	..	82	82
Iowa	160	6	..	63	..	229
Kansas	170	10	..	56	..	236
Kentucky	52	..	..	2	201	255
Louisiana	122	11	..	..	..	133
Maine	70	10	..	..	..	80
Maryland	110	2	..	9	1	122
Massachusetts	227	12	31	..	..	270
Michigan	159	3	..	62	64	288
Minnesota	93	11	..	42	..	146
Mississippi	66	9	81	..	..	156
Missouri	186	11	52	46	..	295
Montana	19	5	..	..	..	24
Nebraska	55	3	..	56	..	114
Nevada	1	1	..	..	159	161
New Hampshire	30	3	1	..	..	34
New Jersey	70	10	..	..	..	80
New Mexico	...	..	..	..	96	96
New York	559	70	..	32	71	732
North Carolina	81	6	..	..	..	87
North Dakota	49	11	..	21	..	81
Ohio	213	9	..	6	..	228
Oklahoma	67	25	3	..	4	99
Oregon	50	15	..	..	..	65
Pennsylvania	505	14	..	..	..	519
Rhode Island	46	7	1	..	..	54
South Carolina	37	2	..	4	..	43
South Dakota	24	2	..	29	..	55
Tennessee	99	13	38	..	..	150
Texas	106	5	48	8	26	193
Utah	34	3	..	..	..	37
Vermont	35	..	..	4	..	39
Virginia	108	15	..	19	..	142
Washington	90	47	..	..	..	137
West Virginia	73	10	1	..	..	84
Wisconsin	50	2	..	61	..	113
Wyoming	8	4	..	..	..	12
Totals	5,452	568	348	614	883	7,865

Medical News

COLORADO.

March Mortality.—During March, 1907, 875 deaths were reported, equivalent to an annual death rate per 1,000 of 16.07. Scarlet fever caused 28 deaths, typhoid fever 11, diphtheria 10 and smallpox 2.

Infectious Diseases.—During March there were reported 376 cases of scarlet fever, 144 of smallpox, 58 of typhoid and 43 cases of diphtheria, an increase as compared with February, of 215 cases of scarlet fever, 40 cases of smallpox, 11 cases of diphtheria and 1 case of typhoid fever.

Personal.—Dr. B. G. Weisel, Glenwood, was seriously injured in a runaway accident, April 9.——Dr. John W. Morgan, Denver, is convalescent after an operation for appendicitis.——Dr. William C. Mitchell, city bacteriologist of Denver, has gone to Europe to study the inoculation theory of tuberculosis.——Dr. Amassa M. Bucknum, Denver, was thrown from his carriage in a collision with an electric car, May 1, and suffered severe contusions.

ILLINOIS.

Addition to Staff.—The county board of Cook County has added six members to the staff of the Cook County Hospital and one member to the staff of the Contagious Disease Hospital.

Physicians' Club Meets.—The Elgin Physicians' Club, May 6, elected the following officers: Dr. Jane C. Trull, secretary; Dr. Lewis W. Dudley, treasurer, and Drs. Edward H. Abbott, Leonard S. Taylor and James Campbell, members of the executive committee. Dr. Dwight E Burlingame was chosen as chairman for the evening.

Sanitary Act a Law.—Governor Deneen has allowed the bill giving the State Board of Health supreme authority in all matters of quarantine (page 1606, THE JOURNAL, May 11), to become a law without his signature. The constitutionality of the sections authorizing the board to make and enforce rules and regulations, which shall have the force and effect of the statutes, was questioned, and this led the chief executive to withhold his signature. The bill makes the secretary the executive officer of the board, and empowers him to enforce such measures as he may deem necessary to protect the public health, when the board is not in session.

Personal.—A banquet was given May 2 by the Menard County Medical Society at Petersburg in honor of Dr. Joseph W. Newcomer, "in recognition of his loyal and faithful services to the profession in Menard County."——Dr. Walter Wilhelmj, East St. Louis, has been appointed assistant physician of St. Clair County, vice Dr. William C. Spannagil, resigned.——Dr. August H. Arp has been made health commissioner of Moline, vice Dr. Robert C. J. Meyer.——Dr. John W. Huston has been made president of the Virginia Board of Health.——Dr. C. Burr Caldwell, Bethany, has received an appointment as resident physician of the Illinois Southern Hospital for the Insane, Anna.

Chicago.

Deaths of the Week.—During the week ended May 18, 707 deaths were reported to the department of health, 10 less than for the preceding week and 127 more than for the corresponding week of 1906, the respective annual death rates being 17.49, 17.74 and 14.76 per 1,000. Pneumonia caused 174 deaths; consumption, 75; heart diseases, 56; nephritis, 50; violence (including suicide), 37; scarlet fever, 12; convulsions and diphtheria, each 10; typhoid fever, 6, and whooping-cough, 4.

Hospital Notes.—Mercy Hospital has obtained a loan of $175,000 to build an addition to its present building at Calumet Avenue and Twenty-sixth Street. The addition is to cost about $200,000.——The first dispensary of the Chicago Tuberculosis Institute, at 34 Vedder Street, was opened under the name of the Olivet Branch. The work of the dispensary will include the examination and treatment of cases at the institution and at the homes of the patients. Drs. Ethan A. Gray and Bird McP. Linnell are members of the staff.

INDIANA.

Contagious Diseases.—A number of cases of smallpox of mild type are reported from Disko, Wabash County.——Five cases of smallpox have developed in Monticello.——Scarlet fever of mild type is reported in Waterloo.

District Society Meeting.—At the annual meeting of the Second District Medical Society, held at Vincennes, April 25, Dr. John W. Gray, Bloomfield, was elected president; Dr.

Thomas A. Hays, Burns City, vice-president, and Dr. Adam B. Knapp, Washington, secretary-treasurer.

Personal.—A banquet was given by the Elkhart County Medical Society at Elkhart, May 2, in honor of Dr. William A. Neal, who has completed 50 years in the practice of medicine. The society presented him with a beautiful cane.——Dr. William K. Mitchell, Ligonier, is reported to be seriously ill. ——Dr. John T. McShane, Indianapolis, is seriously ill with heart disease at his home.——Dr. Tiffin J. Shackleford, Warsaw, has been appointed secretary of the local board of health, vice Dr. Irvin B. Webber, deceased.——Dr. Frank Randolph, Elkhart, has gone to England for the summer.

IOWA.

Commencement.—The annual commencement exercises of the Keokuk Medical College were held May 14, when a class of 30 was graduated.

Personal.—Dr. G. D. Soule has been appointed health officer of Camanche City.——Dr. Frederick J. Will, Des Moines, has been appointed surgeon general of the Iowa National Guard, with the rank of colonel, vice Dr. Wilton W. McCarthy, resigned.

Medical Alumni Election.—At the third annual meeting of the Iowa University Medical Alumni Association, held in Iowa City, May 1, the following officers were elected: President, Dr. Edward E. Dorr, Des Moines; vice-presidents, Drs. Joseph M. Aikin, Omaha, Neb., and Edgar B. Henderson, Marengo, Iowa; secretary, Dr. Clarence E. Van Epps, Iowa City, and treasurer, Dr. John T. McClintock, Iowa City.

Prevalent Diseases.—Northern Iowa is reported to be suffering from an epidemic of smallpox. Plymouth reports 37 cases; Mason City, 2, and a few cases have been reported from Holmes.——At Atlantic 50 cases of measles have been reported.——In Burlington 67 houses have been quarantined on account of measles.——Dr. J. E. Miller, Des Moines, states that there are 20,000 cases of measles in the state.—Measles is reported epidemic at Cedar Rapids.

KANSAS.

Hospital Notes.—A hospital to cost $20,000 is to be erected on the site of the Evergreen Sanitarium, Leavenworth, which was burned recently.——Almost one-half of the $9,600 necessary to purchase a site for the new Sisters Hospital at Topeka has been secured.——By the will of the late Col. S. B. Rohrbaugh, Bethany Hospital, Kansas City, is given a fifty-foot front three-story building on Main street and one-half of all property remaining after certain specific bequests are paid.

Society Meetings.—The annual meeting of the Golden Belt Medical Society was held in Abilene, April 4. The following officers were elected: President, Dr. Howard N. Moses, Salina; vice-president, Dr. Daniel E. Esterly, Topeka; secretary, Dr. William S. Yates, Junction City; treasurer, Dr. John D. Riddell, Enterprise, and librarian, Dr. Edward E. Hazlett, Abilene. The society decided to make its library a permanent feature of the organization, and proposes to collect standard and medical works of a historical nature. Headquarters for the library will be at Abilene.——At a meeting of the Atchison County Medical Society, April 24, Dr. Arthur B. Chase, Atchison, was elected president; Dr. Peter R. Moore, Effingham, vice-president; Dr. James P. Blunk, Atchison, secretary, and Dr. Edward P. Pitts, Atchison, treasurer.

LOUISIANA.

Commencement.—At the annual commencement exercises of the Medical Department of the Tulane University of Louisiana, New Orleans, May 8, a class of 92 was graduated. Prof. G. D. Shands of the law department of the university delivered the annual address, and the president of the university, Edwin Boone Craighead, conferred the degrees.

Anti-Tuberculosis League.—The Central Council of the Louisiana Anti-Tuberculosis League has secured the services of five prominent citizens of New Orleans to act as a finance committee to obtain the fund for the erection of the proposed sanitarium in St. Tammany Parish. About $10,000 is needed for this purpose. The educational campaign of the society is being vigorously prosecuted. On May 17 Dr. William S. Thayer, Baltimore, delivered a lecture under the auspices of the league.

Reorganization of Tulane Medical University.—By the plans for the reorganization of the Medical Department of the Tulane University of Louisiana, New Orleans, Dr. Isadore Dyer is to become associate dean of the faculty, succeeding Dr. Stanford E. Chaille at the end of the college year. The Richardson Memorial or Canal Street it is become the Catherine Hutchinson Memorial, and a new Richardson Memorial will be erected on the campus of the university dormitories for the students. Drs. Ernest S. Lewis and John B. Elliott will retain their chairs until the end of the session of 1907-1908. Dr. Isadore Dyer has been appointed professor of diseases of the skin. Dr. Edmond Souchon is to be passed to the Carnegie pension roll at the end of the present session and will then be appointed emeritus professor of anatomy and curator of the anatomic museum, without salary. Dr. Paul E. Archinard is to become professor of diseases of the nervous system. Dr. John B. Elliott, Jr., is to become professor of clinical medicine. The chair of diseases of children is to be divided into a professorship of orthopedic surgery and one of surgical diseases of children. Dr. Erasmus D. Fenner is to become professor and Dr. William W. Butterworth associate professor of diseases of children; Dr. Herman B. Gessner, associate professor of operative surgery; Dr. Gordon King, associate professor of otology, laryngology and rhinology; Dr. Henry D. Bruns, professor of ophthalmology. The chair of general and clinical obstetrics and diseases of women is to be divided into chairs of gynecology and obstetrics. The chair of physiology, hygiene and pathologic anatomy is to be divided into a chair of physiology and one of pathology and pathologic anatomy. On July 1, 1908, a professor of biology is to be named for the consolidated chairs of biology in the medical and academic departments. The schools of chemistry in medical and academic departments are to be consolidated and divided into appropriate divisions for medical, pharmaceutical, scientific and academic students.

MARYLAND.

Personal.—Dr. J. G. F. Smith, one of the staff of the Springer Hospital, Towson, will leave May 11 for Ardmore, Pa., to take charge of a sanatorium. Dr. C. C. Aitken succeeds Dr. Smith.——Dr. C. R. Sheller has been reappointed assistant health officer of Washington County.

Tuberculosis Hospital Report.—The report of the Endowed Hospital for Consumptives, near Baltimore, showed that 137 patients were treated in 1906, with an average daily attendance of 40 patients. The institution has 51 beds. The total expenses for the year were $15,796.66, or an average daily cost of $1.11 per patient. Dr. Henry Barton Jacobs was re-elected president and Dr. Alexius W. Forster resident physician.

Baltimore.

Death Causes.—During the week ended May 18, consumption caused 27 deaths, Bright's disease 19 and pneumonia 18.

Commencement.—The Baltimore Medical College held its annual commencement May 21. Hon. Charles James Bonaparte, Attorney General of the United States, delivered the address of the evening and conferred degrees on a class of 97.

Personal.—Prof. C. A. Ewald of the University of Berlin will be the guest of Dr. John C. Hemmeter, May 28, during the centennial ceremonies of the University of Maryland, at which Dr. Ewald will receive the degree of LL.D. *honoris causa*.——Dr. Ira Remsen, president of Johns Hopkins University, is to be orator at the commencement exercises of Wake Forest College, N. C., Vanderbilt University, Nashville, the University of Michigan, Ann Arbor and the University of the South, Sewanee, Tenn.——Dr. Walter M. Hemmett has resigned as resident physician at St. Luke's Hospital——Dr. Robert S. Kirk has been elected medical superintendent of the Baltimore Eastern Dispensary and Dr. John Roth assistant.——Dr. William G. Howard, emeritus professor of gynecology at the University of Maryland, is to receive the honorary degree of LL.D. at the centennial of that institution, May 31.——Dr. Hugh Johnston, Jr., sailed from New York for Genoa, May 16.

MICHIGAN.

Presentation to Dr. Biddle.—Dr. Andrew P. Biddle, Detroit, was presented with a silver platter by the Michigan State Medical Society in token of appreciation of his services to the society, his efficiency and zeal. During Dr. Biddle's service as secretary of the society, from 1900 to 1906, the membership increased threefold.

Contagious Diseases.—The secretary of the State Board of Health has found 14 cases of smallpox in Fenton and a number in Tyrone Township, Livingston County.——More cases of smallpox have been reported from Calumet and two in Centennial.——Two cases of smallpox are reported in the vicinity of Jackson, but outside the city limits.——Three members of one family at Sault Ste. Marie have died from cerebrospinal meningitis and two other members of the family are ill with the disease.——Scarlet fever in mild form is prevalent at Granite Bluff and the public schools have been closed.

Personal.—Prof. Warren P. Lombard, Ann Arbor, will spend the summer in southern Europe.——Dr. James F. Breakey has been appointed health officer of Ann Arbor.——Dr. Joseph B. Griswold has been elected president of the board of health; Dr. William H. Veenboer, city bacteriologist; Dr. William De Lano, health officer, and Dr. Ralph C. Apted, city physician, of Grand Rapids.——Dr. Benjamin T. Phillips has been appointed city physician of Menominee.——Dr. William H. Enders, Eaton Rapids, sailed from Baltimore, May 22, for Bremen.——Dr. John H. DeMay has been elected health officer of Jackson, and Dr. Roy W. Chivers, secretary of the board of health.

MINNESOTA.

Physicians Elected Mayors.—Dr. Howard R. Weirick has been elected president of the village of Hibbing; Dr. John W. Andrews, mayor of Mankato, and Dr. Edwin S. Muir, mayor of Winona.

Vital Statistics.—During the fiscal year ended March 31, 10,553 deaths were reported and 13,477 births. Consumption caused 1,107 deaths; pneumonia, 923; diseases of the circulatory system, 923, and Bright's disease, 650. There were 87 homicides and 214 suicides. Accidental deaths numbered 438 and 50 deaths followed surgical operations.

State University Notes.—The University of Minnesota received from the legislature this year more than $1,400,000 for all purposes. This includes $450,000 for the enlargement of the campus, $250,000 for engineering buildings, and an addition of $125,000 to the salary account. This has permitted the raising of salaries of heads of departments from $2,760 to $3,500, with corresponding raises for other positions. In addition, provision has been made for 28 new appointments in the university. In medicine, provision was made for a new man in physiology, one in pharmacology, one in pathology, and three in gross and microscopic anatomy. All of these appointments are to be of thoroughly trained men who will devote their entire time to teaching and investigation in their respective departments.——The legislature accepted the gifts of $150,000 for the first pavilion of the University Hospital, and $50,000 in addition for a site, and also provided for the maintenance of the hospital.——Through the generosity of Alfred F., Charles C., and John S. Pillsbury of Minneapolis, Dr. Thomas G. Lee has secured for the department of histology and embryology the "Handapparat," or working library of the late Prof. William His of Leipzig. This collection comprises over 8,400 monographs and essays contributed by more than 2,500 different authors. This valuable addition to the library of the department makes it now the largest anatomic library in the Northwest.

MISSOURI.

Society Meeting.—At the annual meeting of the Cole County Medical Society, held recently in Jefferson City, Dr. Charles P. Hough, Jefferson City, was elected president; Dr. Harden T. Leach, Elston, vice-president; Dr. Stephen V. Bedford, Jefferson City, secretary; Dr. Joseph P. Porth, Jefferson City, treasurer, and Dr. Jefferson L. Thorpe, Jefferson City, delegate to the state association.

Hospital for Crippled Children.—The committee which had under consideration the proposals for a state hospital for crippled and deformed children, has decided to accept the offer of St. Paul, which contemplates turning over to the state the building now occupied as a hospital for cripples at that city and county hospital and a tract of land at Lake Phalen, together with a cash donation of $5,000 made by the Business League and the Commercial Club, which will probably be used for the erection of cottages for the inmates of the hospital.

NEW JERSEY.

Camden's Health.—The report of the medical inspector, Dr. John F. Leavitt, for the month ended May 17, shows that only 46 cases of contagious disease were reported, as follows: Typhoid fever, 4; scarlet fever, 19; diphtheria, 17; membranous croup, 2; consumption and cerebrospinal meningitis, 2.

Medicine Distributor Fined.—A man who was distributing samples of a proprietary medicine in East Orange was arrested, but pleaded ignorance of the law, and was fined $2. The ordinance, which became effective February 22, provides "that no person shall distribute, deposit or leave on any street or private place any medicine, medical preparation or preparation represented to cure ailments or diseases of the body or mind, or samples thereof, or any advertisement or circulars." The penalty attached is a fine of $50.

Personal.—Dr. Daniel Elliott, Newark, has been elected physician of Essex County, vice Dr. Andrew M. Mills, deceased.——Dr. Charles D. Selvage, assistant house physician at the Newark City Hospital, is a patient in the contagious department of that institution, ill with scarlet fever.——Dr. James D. DeWitt, Harmony, is reported to be seriously ill at the home of his daughter in Easton, Pa.——Dr. Luther M. Halsey, Williamstown, and family are preparing to go to Santa Barbara, Cal.——Dr. W. Blair Stewart has been elected president of the board of trade of Atlantic City.

Society Meetings.—At the annual meeting of the Doctor's Club of Newark, held May 6, the following officers were elected: President, Dr. James H. Lowrey, Newark; vice-president, Dr. Edwin N. Riggens, East Orange; and secretary-treasurer, Dr. Benjamin S. Van Dyke, East Orange.——At the annual meeting of the Morris County Medical Society, held in Dover, Dr. George H. Foster, Rockaway, was elected president; Dr. Lancelot Ely, Flanders, vice-president; Dr. Henry W. Kice, Wharton, secretary; and Dr. James Douglas, Morristown, treasurer.——At the annual meeting of the Somerset County Medical Society held in Plainfield, Dr. J. Henry Buchanan, North Plainfield, was elected president; Dr. Henry V. Davis, North Branch, vice-president; Dr. William H. Long, Jr., Somerville, secretary; Dr. Thomas H. Flynn, Somerville, treasurer; Dr. Aaron L. Stillwell, Somerville, reporter; and Dr. Peter J. Zeglio, North Plainfield, censor.——At the annual meeting of the Camden County Medical Society, Dr. Sylvan G. Bushey was elected president; Dr. Paul M. Mecray, vice-president; Dr. Daniel Strock, secretary; Dr. A. Haines Lippincott, treasurer; Dr. Alfred Cramer, Jr., historian; Dr. Harry H. Sherk, reporter; and Dr. Edmund L. B. Godfrey, trustee, all of Camden.——At the annual meeting of the Mercer County Medical Society, held in Trenton, May 14, the following officers were elected: President, Dr. David F. Weeks; vice-president, Dr. James J. McGuire; secretary, Dr. Charles M. Mitchell; treasurer, Dr. Irenaeus M. Shepherd; and recorder, Dr. Edgar L. West, all of Trenton.——At the annual meeting of the Hunterdon County Medical Society, held in Frenchtown, the following officers were elected: President, Dr. Louis C. Williams, Lambertville; vice-presidents, Drs. Theodore B. Fulper, Junction, and Enoch Blackwell, Clinton; secretary, Dr. Obadiah H. Sproul, Flemington; treasurer, Dr. Isaacs S. Cramer, Flemington; and reporter, Dr. Leon T. Salmon, Lambertville.——The physicians of Vineland have incorporated as the Vineland Medical Association and elected the following officers: President, Dr. Theodore Foote; secretary, Dr. John H. Winslow, and treasurer, Dr. George Cunningham.

NEW YORK.

Bequest to Hospital.—The German Hospital, Buffalo, is to receive $1,000, as part of the proceeds of a concert given by the Vienna Maennerchor in Buffalo.

Ambulance Accident.—While the Emergency Hospital ambulance, Buffalo, was making a hurry call, it collided with a trolley car, and the driver and surgeon of the ambulance were thrown to the ground, but not seriously injured.

Personal.—Drs. Theodore Wright and Charles Andrews have been appointed assistant surgeons of the N. G. N. Y., and assigned to the Seventy-fourth Infantry.——Dr. William Krieger, Poughkeepsie, has been appointed pathologist at the Albany Hospital.——Dr. Helena B. Pierson has been appointed resident physician at the Western House of Refuge for Women, Albion.

The Hospital Bill Again.—The Huth bill, better known as Coroner Harburg's bill, relating to the removal of dying patients from hospitals in New York City, has been passed by the assembly over Mayor McClellan's veto.——The assembly also passed the Armstrong bill authorizing the state to select a site for a new state hospital near New York City, and the Boshart bill prohibiting the employment in any dairy or creamery of persons having infectious or contagious diseases.

The Registration of Tuberculosis.—The report of the State Board of Health shows that during February more than 44 persons died each day of tuberculosis. This bulletin calls attention to the fact that the State Department of Health now requires the registration of all cases of tuberculosis, and urges all local boards of health to include in their ordinances regarding contagious diseases the word "tuberculosis." The experience of New York City has shown the definite and practical value of this plan. The fact that the health department of this city maintains a bacteriologic laboratory where examinations of sputum are made free of charge, has been considered a strong influence in inducing physicians to report cases.

Medical Bill Signed.—Governor Hughes has signed the single Medical Board bill. This bill creates a new definition of the term practice of medicine and substitutes one board of medical examiners under the auspices of the Board of Regents, in place of the three boards, representing the allopathic, homeopathic

and eclectic schools of medicine, which hitherto had jurisdiction. The new law recognizes osteopathy as a system of treatment and provides for examination and licensing of its practitioners. The practice of medicine is defined as follows: "A person practices medicine within the meaning of this act, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or methods, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition." Of osteopaths the law says: "Where the application be for a license to practice osteopathy, the applicant shall produce evidence that he has studied osteopathy not less than three years, including three satisfactory courses of not less than nine months each in three different calendar years in a college of osteopathy maintaining at the time a standard satisfactory to the regents. After 1910 the applicant for a license to practice under this act shall produce evidence that he has studied not less than four years, including four satisfactory courses of not less than seven months each in four different calendar years in a college maintaining at the time a standard satisfactory to the regents."

New York City.

Resolution Regarding the Late Dr. Otis.—The American Society of Genitourinary Surgery, at its recent meeting, adopted resolutions deploring the death of its president, the late Dr. William K. Otis.

Interneships.—Seton Hospital, Spuyten Duyvil, offers a service of 400 beds to qualified graduates in medicine. Two appointments are to be made for a service of one year, beginning July 1. Application may be made to Dr. Haven Emerson, 120 East Sixty-second Street, New York City.

Fewer Pulmonary Deaths.—The reports of the Health Department for the week ended May 11 show a falling off in typhoid fever, only 46 cases having been reported, the lowest number in seven weeks. Tuberculosis reports are also lower than for several weeks. The number of new cases of pneumonia was only 152, the lowest since Dec. 1, 1906.

Personal.—Dr. Thomas Darlington fainted as the result of overwork just after making a speech in Sunbury, Pa.——Dr. and Mrs. Herman M. Biggs and Dr. and Mrs. Francis P. Kinnicutt sailed for Europe on the *Kaiserin Auguste Victoria*, May 15.——Dr. F. E. Winter has been appointed assistant physician at the Minnesota State Hospital for the Insane, St. Peter.

Health of School Children.—This was the subject of a lengthy and profitless discussion, so far as results are concerned, held at the New York Academy of Medicine recently. The object of the conference was to formulate a plan to secure prompt relief to children whose defects are known; to arrange to locate before vacation all children needing attention, and to agree on a method of securing from the Board of Estimate and Apportionment the necessary funds. The Board of Education and the Board of Health were unable to agree that these things ought to be done. The Department of Health objected to the schools being turned into hospitals and clinics, and thought that the effect of so much free medical attention was pauperizing.

Jury Severe on Eddyites.—The coroner's jury in the inquest on the death of Mrs. Corinne McBride, who died recently under the treatment of Eddyites, returned a verdict that the victim had died of acute lobar pneumonia, from which she might have recovered had she had proper medical attendance. The Eddyites who attended here were severely censured as well as the doctors who furnished death certificates for persons who died under this treatment. They called the attention of the Board of Health of New York City, of the district attorney of New York County and of the Medical Society of the County of New York to the practice of such physicians, and requested them to take all the steps required by law to put a stop to such practices and to punish the perpetrators thereof.

The Menace to Water Supply.—The report of the officials who have been investigating conditions in the Croton watershed reveals an extremely startling state of affairs. There are eighteen places where there is wholesale pollution of the watershed as dangerous as that recently revealed at Mount Kisco. The difficulty in the way of remedying the evil is the Apgar bill, passed two years ago, prohibiting the city from purchasing or condemning another foot of land in Westchester County for the protection of the water supply. In order to meet this emergency, a bill has been introduced into the legislature which permits the Apgar bill to be disregarded in this specific case and allows the city of New York and the village of Mount Kisco to enter into a contract for the condemning of such lands as are necessary to abate the present pollution.

NORTH CAROLINA.

Change of Date.—The date for the annual meeting of the Medical Society of North Carolina has been changed from May 28-30 to June 11-13.

Smallpox.—It is reported that smallpox has broken out in Rowan County. Dr. Isaac H. Foust, Salisbury, county health officer, has the cases all under quarantine and has ordered general vaccination.

New Health Board.—The following are appointed members of the State Board of Health for a term of six years each: Dr. Richard H. Lewis, Raleigh (reappointed), and Dr. Edward C. Register, Charlotte.

Medical Practice Act Amended.—At the recent session of the state legislature, the law regulating the practice of medicine was amended so as to empower the State Board of Medical Examiners to grant license to applicants from recognized medical colleges, and licentiates from other states.

New Health Officers.—Dr. Daniel E. Sevier, Asheville, has been appointed county superintendent of health of Buncombe County.——Dr. J. Rufus McCracken, Waynesville, has been reappointed superintendent of health of Haywood County.——Dr. James W. McGee, Jr., Raleigh, has been reappointed superintendent of health of Wake County.

OHIO.

Smallpox.—Smallpox is reported to be epidemic at Chicago Junction, where churches and schools have been closed.——The public schools of Oak Hill have been closed on account of smallpox.——More than 100 cases of smallpox are said to exist in Newport and other places in Miami County, north of Piqua.

Newspaper Notices Prohibited.—At a recent meeting of the Academy of Medicine of Toledo and Lucas County a by-law was enacted making conspicuous newspaper notices of professional attendance by the members a cause for discipline, and possibly expulsion. The annual banquet of the academy was held May 3, when nearly 100 members were present.

Commencement Exercises.—At the first joint commencement of the Starling Medical College and Ohio Medical University, held in Columbus, May 8, a class of 65 received diplomas. The address of the evening was by Rev. Herbert Walsh, D.D., president of the Ohio Wesleyan University, and the diplomas were conferred by Hon. R. W. Huntington and Hon. Fred Heere, presidents of the respective boards of trustees of the colleges.

Personal.—Drs. Lawrence C. Grosh and Peter Donnelly of Toledo sailed from New York, for England, April 27.——Drs. Willis W. Ranshaw and Louis E. Brinker have been elected members of the Cincinnati board of health.——Dr. A. Per Lee Pease, Massillon, returned from a trip to the South Seas and Australia, April 30.——Dr. Edson J. Emerick, Columbus, has been appointed to succeed Dr. E. H. Rorick as superintendent of the State Institution for the Feeble Minded, Columbus.——Dr. J. C. George, Cincinnati, has been elected assistant superintendent of the State Hospital, Columbus.——Dr. Harmon B. Gibbon has been elected health officer of Tiffin.——Dr. Thompson R. Terwilliger, Lima, has returned after a stay of nine months in Europe.——Dr. Harry M. Mealy, Newton Falls, has been appointed local surgeon for the L. E., A. & W. Railroad.

PENNSYLVANIA.

Personal.—Dr. George R. Rohr of Lancaster was thrown from his carriage, May 17, and painfully injured.——Dr. Isaiah F. Everhart has donated a museum of art to the city of Scranton. It is to be erected in the City Park at a cost of a quarter of a million dollars.

Thousands for Charity.—The governor has approved the bill appropriating $600,000 for the establishment and maintenance of a sanatorium for poor consumptives. The work is to be carried out under a department of the State Department of Health, and the sanatoriums may be located in the state forestry reservations.

State Medical Examinations.—The place of holding the state medical examinations has been changed from Harrisburg to Philadelphia and Pittsburg. In Philadelphia the examinations will be held in Musical Fund Hall, and in Pittsburg in the Pittsburg Academy. The time for holding these

examinations will be June 25 to 28. All candidates for examination will be required to furnish a cabinet photograph with endorsed autograph, both photograph and signature being certified by the dean of the medical college from which the candidate was graduated.

Large **Appropriation for Insane.**—The senate and house have made the extraordinary appropriation of $5,433,665 for the care of the state's insane, and this is divided as follows: Maintenance of insane, $2,500,000; Wernersville Hospital, $40,500; Danville Hospital, $389,300; Harrisburg Hospital, $262,000; Norristown Hospital, $416,000; Warren Hospital, $254,500; Polk Institution for Feeble-Minded, $788,000; site for State Hospital for Insane, Allentown, $383,365; site for State Institution for Feeble-Minded and Epileptic, Spring City, $400,000. The above appropriations will provide accommodations for 2,450 additional insane or 862 more than can now comfortably be provided for. The bills making this appropriation are now in the hands of the governor.

Philadelphia.

Hospital Opened.—The Episcopal Hospital, which was closed March 1 on account of the introduction of several cases of infectious diseases by visitors, was reopened May 16.

Alumni to Meet.—The Philadelphia Medical Alumni Association of the University of Pennsylvania will hold its regular yearly meeting in Atlantic City June 4. All medical alumni are invited to attend.

Personal.—Dr. Aller G. Ellis, demonstrator of pathology in Jefferson Medical College, has sailed for Europe, to spend a year in pathologic research.——Dr. Ellwood Matlack sailed for Europe, May 18.——Dr. H. A. Garrison of the Methodist Hospital staff was operated on for appendicitis, May 10.

Bequests.—The will of the late Elizabeth J. Greir bequeaths $4,000 to the Home of the Merciful Savior for Crippled Children as a memorial to Mary Long Greir.——By the will of the late Cockeroft Thomas, St. Joseph's Hospital receives $1,000. ——The will of the late Jane Kennedy bequeaths $250 to the Presbyterian Hospital.

Exempt from Civil Service.—The Civil Service Commission accedes to the request of the director of public health and charities and exempts from examination the physicians in attendance at the Philadelphia General Hospital and Municipal Hospital. About 500 persons are thus freed from civil service examinations, including 150 visiting or out-door physicians.

Decrease in Infections.—The report of the bureau of health for the last year shows a marked decrease in cases of typhoid fever, scarlet fever and diphtheria, as compared with the figures of the first four months of this year. Typhoid cases have dropped from 4,664 to 4,320; scarlet fever from 809 to 641, and diphtheria from 1,455 to 1,413. The health authorities believe the decrease in the latter two diseases is due to the thorough isolation and systematic medical inspection of school children. The decline in typhoid fever is said to be due to the extension of the supply of filtered water.

Health Report.—The report of the bureau of health for the week ended May 18 shows that the total number of deaths reported for the week aggregated 485, a decrease of 75 from the number reported in the previous week and a decrease of 82 from the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 18; diphtheria, 11; cerebrospinal meningitis, 8; consumption, 63; cancer, 17; apoplexy, 22; heart disease, 52; acute respiratory disease, 64; enteritis, 20; appendicitis, 3; Bright's disease, 43; accidents, 13, and marasmus, 3. There were 182 cases of contagious disease reported, with 32 deaths, as compared with 218 cases and 32 deaths in the preceding week.

TEXAS.

Smallpox.—Fifty cases of smallpox are reported from Midland. The entire town is said to be under quarantine and no trains are allowed to stop.——The epidemic reported at Frankston, said to have been smallpox, proved on investigation to be measles of a severe type.

Society Meetings.—The Starr County Medical Society was organized at Rio Grande City, April 7, when the following officers were elected: President, Dr. A. M. Headley; vice-president, Dr. W. T. Kennedy, and secretary-treasurer, Dr. Walter R. Dashiell, all of Rio Grande City.——The Burleson County Medical Association met in Caldwell recently and elected the following officers: President, Dr. Robert E. B. Bledsoe, Somerville; vice-president, Dr. J. C. McGregor, Caldwell, and secretary-treasurer, Dr. G. C. McLeod, Lyons.

Personal.—Dr. Sofie Herzog, Brazoria, has been appointed local surgeon for the St. L., B. & M. Railroad.——Dr. Oliver C. Buster, Pilot Point, was thrown from his buggy, April 15, and severely injured.——Dr. Mills Dennis, Cleburne, was operated on for appendicitis, April 20.—Dr. G. A. Steele, Corpus Christi, has been appointed quarantine inspector to be stationed at Aransas Pass; Dr. Joseph G. Smith, Nevada, to be stationed at Port Cavallo, near Point Lavaca, and Dr. Edwin R. Walker, Ballinger, to be stationed at Velasco.——Dr. William H. Anderson has been made secretary of the El Paso board of health. ——Dr. Solon Milton has succeeded Dr. Lyman A. Barber as city physician of Fort Worth.

Commencements.—At the annual commencement exercises of the Medical Department of Fort Worth University, May 6, a class of 21 was graduated. The diplomas were presented by President William Fielder of the university.——At the seventh annual commencement of the Baylor University College of Medicine, Dallas, April 23, a class of seven was graduated. The baccalaureate address was given by Rev. H. F. Riley, Houston, the faculty address was delivered by E. G. Eberle and the degrees were conferred by President S. P. Brook, president of Baylor University, Waco.——The Southwestern University Medical College, Medical Department of Southwestern University, Dallas, at its annual commencement, April 27, graduated a class of 12. The degrees were conferred by Dr. John O. McReynolds.——The commencement exercises of the College of Physicians and Surgeons, Dallas, were held April 10, when a class of 23 was graduated.

UTAH.

State Board Meeting.—At the reorganization of the State Board of Medical Examiners Dr. David C. Budge, Logan, was elected president; Dr. Robert W. Fisher, Salt Lake City, secretary, and Dr. Amasa S. Condon, Ogden, treasurer.

Personal.—Dr. David C. Budge is making arrangements for the building of a general hospital at Logan.——Dr. Frederick W. Taylor, Provo, has been made a member of the State Board of Medical Examiners, vice Dr. Elias S. Wright, Salt Lake City, resigned.——Dr. James M. Henry, Payson, has been elected president of the Utah County Medical Society, vice Dr. Robert E. Steele, Lehi, who has moved to Salt Lake City.

VIRGINIA.

Medical Society Meeting.—At the annual meeting of the Piedmont Medical Society the following officers were elected: President, Dr. James H. Browning, Charlottesville; vice-presidents, Drs. W. S. Phillips, Orange County, and John A. B. Sinclair, Charlottesville; secretary, Dr. Lewis Holliday, Orange Courthouse; treasurer, Dr. John T. Walker, Barboursville.

Personal.—Dr. Littleberry S. Foster, formerly superintendent of the Eastern State Hospital, Williamsburg, has been appointed superintendent of the Norfolk Protestant Hospital. ——Dr. Daniel Trigg, Jr., who has been assistant physician at the Southwestern State Hospital, Marion, has resigned and will enter practice in Johnson City, Tenn.——Dr. Moses Benmosche, Richmond, has gone to Europe to study tuberculosis.

New Superintendents.—The general board of directors of state hospitals at its recent meeting elected Dr. William F. Drewry superintendent of the Central State Hospital, Petersburg; Dr. Oliver C. Brunk, superintendent of the Eastern State Hospital, Williamsburg, and Dr. Joseph S. DeJarnette, superintendent of the Western State Hospital, Staunton, and Dr. Albert S. Priddy, superintendent of the Southwestern State Hospital, Marion.

Virginia Sanatorium for Consumptives.—The Virginia Sanatorium for Consumptives, located at Ironville, which was opened February 10 for the reception of patients, has received 18 patients since that time, 17 of whom have thus far improved, exceeding the expectation of the management. The capacity of the institution is 30. The general line of treatment is fresh air, forced alimentation and regulation of rest and exercise. The friends of the sanatorium are endeavoring to raise $20,000, so that the institution may be on a free basis. At present about $6,000 has been raised, but the sanatorium has a debt of $3,600.

WISCONSIN.

Commencement.—Authority having been granted by the legislature for the consolidation of the Marquette College and Milwaukee Medical College, degrees were conferred on a class of 51, May 14, by President A. J. Burrows of the Marquette College.

Sanatorium Opened.—The Milwaukee Sanatorium for Tuberculosis opened to receive patients May 15. The central building and tent cottages can now accommodate from 12 to 15

patients. The business men who are interested in the work are endeavoring to raise $20,000 for the support of the institution.

Medical Society Meeting.—At the annual meeting of the Dodge County Medical Society, held in Beaver Dam, May 6, the following officers were elected: President, Dr. Wallace E. Hallock, Juneau; vice-president, Dr. Henry M. Holtz, Beaver Dam, and secretary-treasurer, Dr. George W. Dewey, Burnett Junction.

Personal.—Dr. and Mrs. William H. McDonald, Lake Geneva, returned May 4, after a three months' tour of Europe.——Dr. John B. Spalding has been reelected health officer of Kenosha.——Dr. Walter F. McCabe, Beloit, has been obliged to give up his practice on account of ill health.——Dr. and Mrs. Stanton Allen, Milwaukee, will leave in a short time for their new home in Seattle, Wash.

GENERAL.

Confederate Surgeons to Meet.—The annual meeting of the Association of Medical Officers of the Army and Navy of the Confederacy will be held in Richmond, Va., May 30, under the presidency of Ernest L. Lewis, New Orleans.

Retirements.—Col. Edward B. Moseley, assistant surgeon general, U. S. Army, was placed on the retired list May 10, on account of disability incident to the service.——Medical Director James R. Waggener, U. S. Navy, was placed on the retired list May 6.

Civilian Practitioners on Military Reservations.—Orders have been issued by the War Department requiring civilian physicians who desire to practice on military reservations, to register their names with the post commander and to agree to observe the rules and regulations relative to the protection of the command against infectious and contagious diseases.

Medical Milk Commission.—The Medical Milk Commissions of the United States will hold a conference at the St. Charles Hotel, Atlantic City, N. J., Monday, June 3. There will be three sessions at 10 a. m., 3 p. m. and 8 p. m. The object of the conference is to determine the scope of Medical Milk Commission, harmonize its working methods and requirements and establish uniform standards for certified milk. Dr. Henry L. Coit, Newark, N. J., is temporary chairman, and Dr. Otto P. Geier, Cincinnati, Ohio, temporary secretary of the commission.

State Board Convention.—The seventeenth annual meeting of the National Confederation of State Medical Examining and Licensing Boards will be held at the Hotel Traymore, Atlantic City, N. J., June 4, 1907. The following topics are announced for discussion:

1. The Legality of State Medical Examinations and Interstate reciprocity in Medical Licensure.
2. The Recognition of Sectarian Medicine by Statutory Law.
3. Therapeutics: The Acme of Medical Art, the Bane of Sectarianism.
4. One Board Laws for the Regulation of Medical Licensure.
5. Definitions: (1) "A Reputable Medical College." (2) "The Practice of Medicine." (3) "Preliminary Training."
6. The Divided Examination for Medical Licensure.
7. The Relative Functions of Degree-Conferring and Licensing Bodies.
8. The Qualifications of Medical Teachers.
9. The Qualifications of Medical Examiners.

Further information may be obtained from the secretary, Dr. Murray Galt Motter, 1841 Summit place, Washington, D. C.

CANADA.

Ontario Physicians to Meet.—The Ontario Medical Association will hold its twenty-seventh annual meeting in the medical building of the University of Toronto, May 28-30.

Medical Society Organized.—A new medical society has been organized in Haldimand County, Ontario, with Dr. Thomas T. S. Harrison, Selkirk, as president, and Dr. William Arrell, Cayuga, secretary.

Commencement.—Thirty medical degrees were conferred this spring at the University of Manitoba. One remarkable point in the lists of medalists and prize winners was the very high stand taken by the Icelandic students of the university.

Infectious Disease Hospitals Needed.—Dr. Charles Sheard, health officer of Toronto, will advise the city council of that city to provide a hospital for such diseases as measles, erysipelas, tuberculosis, mumps, ringworm and itch, as these diseases are not admitted to the Toronto General Hospital.——The health commissioner of Montreal will recommend to the city council that a renewal of the 25-year contract be made between the St. Paul's and Royal Alexandria hospitals in that city for the treatment of contagious diseases in the municipality. By the provisions of the contract the annual civic grant will be increased from $15,000 to $30,000, and under the new arrangement the hospitals must erect a separate pavilion for cases of erysipelas.

Personals.—Dr. Harry B. Anderson, associate in medicine in the University of Toronto, has gone to Germany for a few months.——Dr. William H. Pepler, Toronto, demonstrator in pathology in the University of Toronto, is doing graduate work in New York.——Dr. George Elliott, Toronto, general secretary of the Canadian Medical Association, is in Montreal arranging for the coming annual meeting in that city September 11, 12 and 13.——Dr. Woodhouse, house surgeon at the Victoria Hospital for Sick Children, Toronto, has been appointed superintendent of the Toronto Isolation Hospital.——Dr. David A. Shirres, Montreal, while out horseback riding recently, was attacked by a bull dog, and so severely injured that the amputation of several toes was necessitated.——Dr. Walter M. English, London, has been appointed medical superintendent of the Hamilton (Ont.) Provincial Hospital for the Insane, vice Dr. James Russell, resigned.——Drs. W. J. Chapman and Stanley Paulin of Toronto University, and Dr. J. L. Walker of McGill University, have been admitted to membership of the Royal College of Surgeons, England.

FOREIGN.

Warning Circulars for File-Makers, Stonecutters, etc.—The German Imperial Board of Health has been issuing a series of circulars giving advice for prevention of various diseases and professional affections. The latest set is for the use of stonecutters, file-makers and workers in tanneries where chromic acid is used. These circulars are distributed free to those interested.

Fine for Unqualified Medical Man in Germany.—The Dresden Medical Society, recently denounced to the police the owner and director of a local sanitarium. He is a former gardener, named Gössel, and besides his sanitarium did a large business in what he called "radium water," claiming that it was a sure cure for diabetes, cancer, etc. It was proved that it was nothing but ordinary spring water. He was condemned to a fine of $400 or 100 days' imprisonment.

Medical Study Trip in France and Germany for 1907.—The annual medical educational trip to health resorts will this year commence at Nancy, France, August 7. The party will then proceed to Stuttgart, Munich, Carlsbad, Marienbad, Vienna, Budapest, Innsbruck and Zurich, disbanding at Besançon August 23. The medical and sanitary institutions of each place visited are inspected and the party is always cordially welcomed by the local physicians. The trips are in charge of M. Etienne Bazot, 8 rue François-Millet, Paris, XVI, France.

Medical Missions in China.—According to the *Deutsche med. Wochschr.*, the Germans have only 4 hospitals and 5 physicians in China. The French have 100 hospitals, the Americans 97, with 137 physicians, and the English 57 hospitals and 83 physicians. There is further an Anglo-American Union Medical College, with 9 physicians and 13 medical instructors. The French are also planning to found a medical school at Szechuan. The Germans are taking steps to organize a medical school at Shanghai, as already mentioned in these columns.

Epidemic Diseases in Europe.—Epidemic cerebrospinal meningitis is reported in many German cities, including Berlin and Dresden, and also in Vienna, in Milan, Italy, and at various points in Russia. The cases are comparatively few in number, although scattered over a large territory, and the course of the disease seems to be this year milder than usual. A number of cases of sickness have developed at Cartagena, Spain, and the *Siglo Medico* states that the prime minister threatened to prosecute any periodical which should state that the sickness in question was bubonic plague.

Scarcity of Communications to the French Academy of Medicine.—Some of our foreign exchanges are commenting mischievously on the fact that the grave and important *Académie de Médecine* has had to adjourn several times lately after the reading of the minutes of the last meeting and the correspondence, without listening to any scientific communication, as there was none presented. This is the more remarkable, as the Academy at Paris is regarded among all the Latin races as the great high tribunal to which important works and discoveries are communicated from all over Latin Europe and Latin America.

Ozone for Local Treatment of Wounds.—A von Gleich announced at the meeting of the Vienna K. K. Medical Society, May 3, that he had devised a means to generate ozone in a wound as a local disinfectant. This combines the advantages of

a solution of hydrogen dioxid with those of electric action, while avoiding the use of water. The technic is like that for temporary or continuous irrigation, the oxygen being supplied from an ordinary tank and activated by an induction current. He suggests that the superior results obtained in the treatment of wounds at certain clinics may be due to the ozone naturally in the air. He adds that with this artificial generation of ozone it might be possible to secure the advantages of "open treatment" of wounds, free from its present drawbacks.

Museum of Phylogeny.—The town of Jena in Germany is planning a museum illustrating the evolution of species, as a tribute to Ernst Haeckel, the great biologist and embryologist. Land has been donated near the Zoologic Institute of which he has charge, and the building will be completed by fall. The extensive collections now in the university are to be made accessible and explained to the general public in the new "Phylogenic Museum." The university and town of Jena recently celebrated Haeckel's fiftieth professional anniversary with much ceremony. The university presented him with a parchment extolling his achievements in the biologic sciences, and his work as a scientific writer, as an artistic interpreter of the beauties of Nature, and as a guide in decorative art, revealing to the latter unsuspected treasures of form and design.

LONDON LETTER.

(From our Regular Correspondent.)

LONDON, May 8, 1907.

Counter Manifesto on Alcohol.

The manifesto on this subject, referred to in THE JOURNAL, April 20, 1907, p. 1363, has now been followed by a counter-manifesto signed by several equally eminent members, such as Sir Frederick Treves, Sir James Barr, Prof. Sims Woodhead and Dr. William Ewart. The counter-manifesto is as follows: "A manifesto with regard to the use of alcohol has received wide circulation. By reason of the high position in the scientific world held by its signatories, great importance has been attached to the views it expresses. As it appears to us, both by reason of the wording of the manifesto and of the use to which it has been put, certain misconceptions may arise we wish to say that we gravely dissent from much of its teaching, nor can we accept it as an authoritative statement of recognized medical opinion on the matter. Without asserting that alcohol has no value in the treatment of disease, we believe that its use is occasional rather than regular, and limited rather than wide. We regard the word 'life-preserving' in connection with alcohol as misleading, and we consider the statement that alcohol 'has the power to sustain cardiac and nervous energy' rests on no certain clinical or experimental evidence. On the other hand, we strongly believe that alcohol is unnecessary as an article of consumption in the case of healthy men and women, and that its general use could be discontinued without detriment to the world's welfare. As alcohol is one of the most fruitful causes of poverty, disease and crime, we are pleased that it is sparingly employed as a remedy by the majority of medical men."

Great Mortality from Plague in India.

The enormous number of 75,000 deaths from plague has been recorded in India for the week ending April 13; of these 70,000 have occurred in Bengal, the United Provinces and the Punjab. The present epidemic commenced in the Punjab in October, 1897, and since then nearly 1,500,000 deaths have occurred. The seasonal recurrence of plague in India, despite the extensive, and at times drastic precautions of the sanitary authorities, continues.

The Detrimental Effects of the London Fogs.

At the annual meeting of the Coal Smoke Abatement Society, Sir Frederick Treves dwelt on the evil effects of fogs. During three days' fog in Manchester it was calculated, he said that for every square mile there were 168 pounds of sulphuric acid and 1,456 pounds of soot. A similar calculation in Chelsea, a fashionable London borough, showed for every square mile 6 tons of soot. One of the worst visitations of fog occurred in January and February, 1880, when the death rate of London rose from 27 to 48 per 1,000. In recent years, due to the increasing use of gas stoves, London fogs have not been as bad.

The House Fly and Summer Diarrhea.

The Health Committee of the Liverpool Corporation, suspecting that the house fly plays a part in the production of summer diarrhea, has made an appropriation to Professor Ross, the discoverer of the malariai parasite, for the investigation of its life history. It is purposed to strike at the breeding place of the flies by encouraging the public to abolish ashpits and substitute sanitary bins.

Unification of Pharmacopeial Formulas.

A report has been submitted to the Pharmacopeia Committee of the General Medical Council by the Committee of Reference in Pharmacy showing what changes will be necessary in the next issue of the British Pharmacopeia to give effect to the international agreement.

The Epidemic of Cerebrospinal Fever.

The disease still prevails, principally in Glasgow and Belfast. In Glasgow there were 114 cases under treatment on April 26. In the whole of Scotland for the week ending this date there were 26 deaths from the disease, of which 8 occurred in Glasgow and 2 in Edinburgh. In Belfast 36 fresh cases were notified, and 27 deaths occurred in the week ending April 25, making a total of 337 cases and 227 deaths since the commencement of the epidemic.

VIENNA LETTER.

(From our Regular Correspondent.)

VIENNA, May 6, 1907.

Insurance for Practitioners.

Within the last few years a large number of malpractice suits have been brought against physicians, and although the majority of them were dismissed by the judge, in some cases the doctors had to pay heavy sums. If a patient thought he had been harmed by the medical man there was always some one at hand to "blackmail" the physician. A stop has been put to this by a judge deciding that the costs of a case where a physician was prosecuted without any fault being proved, had to be paid by the prosecutor. In order to check such lawsuits the medical council appointed a commission, with a view of entering into connection with some of the largest insurance companies, and two different kinds of insurance are now recommended by the council. The first concerns the insurance against claims for malpractice (Haftpflicht). The council is to be informed of every claim made by the patients against the doctor. The latter will receive not only a counsel, but an amount usually sufficient to cover all claims will be paid for him by the company. The other kind of insurance is the personal accident insurance, which will cover the risks of infection during practice, including all contagious diseases and syphilis. Hitherto no medical man was able to recover damages if he contracted diphtheria or syphilis, or if he was incapacitated by a simple angina contracted from his patients.

A Military Surgeon on the Value of Military Drill.

At one of the last meetings of the medical officers of the garrison a remarkable criticism was made of the value of military drill as now practiced. Instead of developing the soldier and making him capable of bearing the strain of the exertions of active service, the majority of officers practice the so-called "parade" march, which offends the medical eye, because it requires the muscles of the leg to act in an unnatural way. Another practice condemned is the "development of chest" and the "biceps exhibition." A much worse condition obtains in the German army, where the parade drill is still more practiced. The results of the present methods of drill are a large number of foot sores, of spraining of the ankles and small hemorrhages in the muscles of the calves, along with hypertrophied heart muscles, without any gain on the side of endurance.

Fighting Infantile Mortality.

The committee for reducing infantile mortality, constituted some two years ago on the initiative of Professor Escherich, recently published its yearly report, which makes interesting reading. The good results obtained by instructing mothers and distributing wholesome milk to the very poor are particularly commendable. In several of the densely populated outlying districts, where the fecundity and mortality are high, so-called "goutte de lait" were erected, where mothers could get, free of charge, not only good medical advice, but also a good supply of pure milk. A small deposit was charged only for the stoppered bottles which were specially constructed for sterilization. The children had to be brought at least once a month to the institution, where their weight and general condition were noted. Several trained nurses were employed to visit the mothers and their babies in their homes. Special care was taken to induce mothers to give up mixed feeding, and to promote breast feeding a premium of 5 to 10 crowns ($1 to $2) was given to some women if they fed their offspring by the breast for at least seven months. The diet of the mothers also was controlled. Infant mortality has been reduced to 13 per cent in the first year.

Correspondence

Medicinal Foods.

CHICAGO, May 14, 1907.

To the Editor:—I am glad to see the report on medicinal foods in THE JOURNAL, May 11. I have long wished for accurate proof of the weakness of such foods in nutrient value, for I was firmly convinced their value was low, and such proof is afforded by the table. It is well for those who use them so freely and who so unhesitatingly substitute them for milk and other articles of diet, to study the problem of the calories in these foods as set forth in the report; it is surely instructive. Those who are opposed to the use of alcohol in practice will do well to read this report before they again prescribe these articles with so free a hand. JAMES B. HERRICK.

State Aid for Private Medical Schools.

CHICAGO, May 11, 1907.

To the Editor:—The editorial on "The Future of Medical Education in the United States," in THE JOURNAL, May 11, 1907, is timely and covers the field, excepting that it does not suggest a remedy. In this country are between $15,000,000 and $20,000,000 of private capital invested in the various medical schools, and it is not fair that the owners of these schools should be taxed to support state schools, however desirable the latter might be. It is not fair, either, for states to come in competition with this capital. There can be no question that the states should establish standards which will give us as good physicians as there are anywhere in the world. As suggested in your editorial, there is no longer any necessity for turning out a lot of physicians to meet the wants of poor people in thinly settled communities.

As it is not possible to establish high grade state schools in states where there are already one or more medical colleges without injury to these latter institutions, unless some special provision is made for them, it appears to me that the most equitable way would be for the state to appropriate a sum equal to the cost of instruction for each student graduated within its borders. It should at the same time supervise these schools and demand that the school graduating that student have ample facilities for teaching and that its requirements be fully as high as those of the most enlightened European countries. Such a plan as this would enable medical schools already established to go on with their work without a complete sacrifice of their investments. It would not operate to the advantage of any particular school or sect, and it appears to me that it would be the most likely of any plan that has yet been suggested to meet with the support of a large percentage of the teachers in the various medical colleges already existing, and also of the profession at large. The state schools already in existence ought at once to advance their requirements to the best of European standards.

E. FLETCHER INGALS.

Infant Feeding and "The Digestive Impossibilities."

GREENVILLE, OHIO, May 17, 1907.

To the Editor:—I must unburden my mind of a recent incident in reference to proprietary medicines. The case is that of an infant (my own) which failed to thrive on breast feeding, at six weeks having gained one pound. The child had colic and passed frequent watery stools, greenish in color and containing curds. I corresponded with one of the most eminent men in the middle West as to what I would best do, not caring, under the circumstances, to take the entire responsibility myself. This man is a professor in a first-class college. Imagine my disgust and amazement when he recommended not only a prepared food, but also equal parts of Elixir Lactopeptine and Liquid Takadiastase with each feeding. As our Council has shown the former practically inert, and as I had recently read the report on the digestives, I gently placed his letter in my waste basket and put the baby on mixed feeding. I used cow's milk, modified according to Holt, with happy results. Had I been unwise enough to have used the medicine recommended I doubtless would have attributed the sudden change for the better to it. It appears to me the Council yet has an immense amount of work ahead of it. It has evidently a mighty power to overcome, in that such men as have the training of medical students are teaching them to use the very remedies that have been condemned. I want forcibly to express my appreciation of the great work being done by the Council. B. F. METCALFE.

Newspaper Reports of Morphin Euthanasia in Tuberculosis.

ANN ARBOR, MICH., May 17, 1907.

To the Editor:—I take this method of trying to correct the outrageously false impression given by many newspapers to the statement of Dr. Knopf before the Clinical and Climatological Section of the National Association for the Study and Prevention of Tuberculosis, at its recent meeting in Washington. I was present as chairman of the section when Dr. Knopf made his remarks. He was within a few steps of where I sat, and I was paying close attention to his remarks. I understood him, and all others with whom I have spoken on the matter since the meeting understood him, to state plainly the need of using morphin to relieve painful symptoms in the last stage of ths disease. Any physician who heard the remarks must have known that the morphin was used, not for shortening life, but solely for making it easier, and every physician also knows that life is generally prolonged by that sort of treatment. As I have expressed myself before regarding the shortening of lives of seriously sick people, I need hardly say that had Dr. Knopf advocated anything like the administration of large or dangerous doses of morphin I would have vigorously protested. I hope that physicians who are asked about the matter will contradict the newspaper statements, and seize the opportunity of explaining the real object of the treatment.

GEORGE DOCK, M.D.

The Great American Fraud.

EDMORE, MICH., May 14, 1907.

To the Editor:—Regarding your comment on Dr. Miller's letter in THE JOURNAL, May 11, 1907, page 1617, couldn't Drs. Bye and Coffee be prosecuted for receiving money under false pretenses? Surely such a charge could be made from such cases as Dr. Miller reports. Or if that is not feasible, perhaps the postoffice authorities would take action if such frauds were brought to their notice. It seems inhuman that such vampires are allowed to feed on the poor and ignorant for want of some one to start a case against them.

E. M. HIGHFIELD, M.D.

NEW YORK CITY, May 15, 1907.

To the Editor:—The methods of the "patent medicine" quack and advertising charlatan were pointed out anew in the two cases reported in THE JOURNAL, May 11, 1907. The usual details of low and sordid deceit, rapacity, hypocritical interest in the patients'—or rather the victims'—well being, and mock piety of a particularly offensive and greasy nature are coupled in these instances by actual false representations as to the nature of the remedy, the results to be attained by its use, the danger of neglect of "treatment," and other items. In the same communication Dr. Miller proposes that an effort be made to raise a fund to have *Collier's Weekly* and the *Ladies' Home Journal* republish their articles on "patent medicines" in pamphlet form, and gives it as his opinion that this would be "the most vital blow that could be given this colossal fraud." While it is not my intention to oppose reform, however accomplished, nor to object to any method which promises even the slightest progress, it seems to me that the educational propaganda is but a single factor and one whose efficacy has been greatly overestimated in this as in other social campaigns. Education is not a panacea. It is an instrument of precision; a weapon, if you will, requiring strength and good will to use it, and the sinews of war—that is, cash—to back it. Ignorance alone is not the cause of the success of the great American fraud or of any other fraud, as the better classes, the intelligent citizens, the ministers, lawyers, and not infrequently the physicians, are but too ready to lend their support to shams.

What we do need is the protection of the law for the dupes who can not or will not protect themselves. We have enough education; let us do something with it. If the community is not enlightened as to "patent medicines" and advertising charlatans, at least the profession knows all about them. Let it bring this knowledge of facts to the notice of the proper authorities and use every effort to have the necessary steps taken to punish the offenders. Surely the contemptible specimens, like "Dr." Bye and "Dr." Coffee, with their "oil cures" for cancer and their "absorption" treatment for eye patients whom they have never examined, are guilty of fraud or of obtaining money under false representations. Can not the reputable physicians of their town or district, the county or state medical society, or if need be, the American Medical Association itself, get the local district attorney or court to take action in such a case? A single conviction on this charge will do more good than a ton of pamphlets. We get too much mail matter as it is, and all know that it is not always easy to separate the chaff from the wheat. Magazine science and magazine reform are apt to be taken *cum grano salis*, which in this connection means "with a *barrel* of salt." Not so the plain facts of a court's sentence of the criminal fakir. In Germany these gentry are required to publish notices of their own conviction in criminal cases and of the court's adverse decision in civil cases. What we need is a little concerted action, not education. PERCY FRIDENBERG, M.D.

Association News

Validation of Tickets on Pier.

Arrangements have been made to have a branch agency on Young's Pier to validate excursion tickets during the meeting. The regular railroad agency will be at the Morris Guards' Armory, 12 South New York Avenue, and extension of tickets after June 10 will be made at this place.

Philadelphia General Hospital Clinics.

The clinics, for the Atlantic City visitors, to be given at the University of Pennsylvania and at the Jefferson Medical College have already been noted and the schedules given in THE JOURNAL, May 4 and 18, respectively. These clinics come immediately before and after the session of the American Medical Association, to permit the members to attend them on their way to and from Atlantic City. A series of clinics will also be given at the Philadelphia General Hospital, as follows:

MONDAY, JUNE 3.

10:00 to 11:00 Pediatric Clinic, Dr. J. Madison Taylor.
11:00 to 12:00 Surgical Clinic, Dr. Edward Martin.
3:00 to 4:00 Neurologic Clinic, Dr. Charles K. Mills.
4:00 to 5:00 Medical Clinic, Dr. L. N. Boston.

SATURDAY, JUNE 8.

10:00 to 11:00 Gynecologic Clinic, Dr. W. F. Haehnlen.
11:00 to 12:00 Surgical Clinic, Dr. A. C. Wood.
3:00 to 4:00 Neurologic Clinic, Dr. James Hendrie Lloyd.
4:00 to 5:00 Medical Clinic, Dr. David Riesman.

MONDAY, JUNE 10.

10:00 to 11:00 Tuberculosis Clinic, Dr. W. B. Stanton.
11:00 to 12:00 Surgical Clinic, Dr. William L. Rodman.
3:00 to 4:00 Neurologic Clinic, Dr. Charles S. Potts.
4:00 to 5:00 Medical Clinic, Dr. Joseph Sailer.

Oncologic Clinics.

Dr. G. Betton Massey writes that at the Oncologic Hospital, Forty-fifth and Chestnut Streets, Philadelphia, clinical demonstrations of cataphoric and other metnods in the treatment of cancer will be given June 1, 3, 7 and 8, from 2 to 4 p. m. Physicians en route to or from the Atlantic City meeting will be cordially welcomed.

The Outing Club Trip.

The American Medical Association Outing Club has given up its resort trip after the session because of the short time limit on tickets.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

Medical Legislation.

Dr. Noah Haynes, Seneca, Kan., writes regarding medical practice acts as follows:

"In the protest against the passage of Senate Bill 5221 appeared a suggestion to the effect that it was a positive duty of the medical profession to secure a uniform system of examinations of all persons who desire to practice medicine in any of its branches, leaving the question of therapeutics only, for examiners of special schools or sects in medicine. Examinations for the right to practice medicine should conform to a standard agreed on and the standard should not be raised without giving three year's notice of the proposed change. Examination papers should be open to the public. Equal scientific attainments should be required for all, leaving the question of therapeutics to be determined by the states. A state has no more right to license an uneducated man to practice medicine than it has to refuse to quarantine against contagious diseases or to neglect to observe reasonable hygienic precautions for the safety of its own citizens and the citizens of contiguous states. The right of the state to guard its people against disease or any other misfortune is unquestioned. If the object of medical practice laws was merely to give all the *physicians* in the state a "square deal," the question might be left (although it should not be) to take care of itself. But nothing less than a high and uniform examination test will give the *people* a "square deal." The organized medical profession is caring for all the people all the time. The altruism and humanity of medicine is higher than anything the world has hitherto witnessed. It is practical Christianity with or without the faith. To oppose scientific medicine by admitting the unlearned, the immoral and the incompetent is a public calamity. The people, with the exception of the superstitious and the unreasonable, will stand by and uphold the profession if need be. We still have some work to do within our ranks. Organized medicine has produced her institutions of learning and has made it possible for the physician to be what he is, to have learned what he knows. In return, he should contribute of his time, experience and thought to the maintenance of organizations for the common good. In union lies power to do good. The first opportunity to join the local society should send every physician as an enthusiastic knocker to the door of admission. What is true of the individual also applies to sects. They must be brought into the open for their own good and for the good of the public. This is one of our many humanitarian duties."

Our correspondent has struck at the root of the entire perplexing question of medical legislation when he says that laws regulating the practice of medicine are for the good of the people and not for the protection and fostering of any one school or sect. Too many of our legislators take a most superficial view of the question and look on efforts to obtain medical legislation as simply "a row among the doctors."

One of the duties of the organized profession is to enlighten and educate legislators so that the object of medical legislation may be understood. As to the exact form which an ideal law should take, this must be determined by competent men after careful and patient study. Uniform legislation must then be secured in every state. A single board, organized to protect the public rather than to advance the interests of the profession or any part of it, giving an adequate examination in all branches of medicine, with the possible exception of therapeutics; having the power to revoke licenses for immoral or unprofessional conduct, and holding uniform standards with similar boards in other states, seems at present to be essential to ideal legislation.

Physicians' Influence on Legislation.

In a recent number of the *Mobile Medical and Surgical Journal* appears an excellent article by Dr. C. Kendrick, of Kendrick, Miss., on "Medical Legislation." Dr. Kendrick says: "In perhaps a large majority of the states, when the physicians ask for any special legislation, there are many ready to cry out against it and to say that it is in the interests of doctors only. For many years I have been in a position to study this subject,

and I believe that the doctors themselves are responsible more than any other class for the opposition to the laws they ask for. When lawyers and men of other professions desire a change in the law they work for it. We, as a class, do not. During the sitting of the last session of the Mississippi Legislature this matter was more forcibly impressed on me than ever before. The code commissioners had inserted a section in the code which they proposed to the legislature for adoption which made the secretary of state the examining board for osteopaths. By paying the fee of $10.00, osteopaths desiring to practice their art or profession could do so without any further examination. There were only ten to twelve osteopaths in the state. How they succeeded in getting their ideas adopted I do not know. As one illustration of their efforts and the lack of efforts on the part of physicians, I was told by one of the state senators, a prominent lawyer, ex-confederate soldier and experienced legislator, that he had received about forty letters asking him to support the osteopathic section and only three asking him to vote against it. There were at that time about ten osteopaths and about 2,000 physicians in the state."

Dr. Kendrick's proposed remedies for the above conditions are:

1. The medical profession must agree fully beforehand as to what it wants.

2. This action must be endorsed by all county and district societies.

3. Every member in the state must see to it personally that his senator or representative receives complete information regarding the bill and that he is urged to support it or to condemn it, as the case may be, as a measure of public policy and for the good of the people.

Marriages

JAMES M. FORBES, M.D., to Miss Ida Heyl, both of Philadelphia, May 6.

HARVEY L. MORRIS, M.D., to Miss Mabel C. Jarvis, both of Vassar, Mich., May 8.

PHILEMON ROY, M.D., St. Paul, Minn., to Miss Adah Cheverton of Rich Hill, Mo.

OSCAR HARUFF, M.D., Pueblo, Colo., to Miss Reta Waggoner, at Greeley, Colo., May 8.

A. JUDSON CHALKLEY, M.D., Norton, Va., to Miss Annie Ireland, at Lexington, Mo., May 11.

JOHN J. BARCLAY, M.D., Grinnell, Kan., to Miss Mary S. Royer of Gove, Kan., January 27.

ARCHIE LORAINE DAY, M.D., Trenton, Iowa, to Miss Bertha Twining of Pasadena, Cal., May 4.

LOUIS FERDINAND ALRUTZ, M.D., Chicago, to Miss Helen Althea Truax of Kenosha, Wis., May 8.

MANUEL ALVAREZ, M.D., New Orleans, La., to Miss Harriette Dell Westgate of Jackson, Mich., May 1.

EVERETT PUSEY BARNARD, M.D., to Miss Eliza Harman Bosler, both of Philadelphia, at Baltimore, May 10.

SMITH W. BALLINGER, M.D., Council Bluffs, Iowa, to Miss Edith McCallum of Brockville, Ont., April 29.

Deaths

J. G. Brodnax, M.D. University of Virginia, Department of Medicine, Charlottesvile, 1849; surgeon in the Confederate service throughout the Civil War; a member of the Medical Society of the State of North Carolina and Guilford County Medical Association, International Association of Railway Surgeons and Association of Southern Railway Surgeons, died suddenly at his home in Greensboro, N. C., May 9, from neuralgia of the stomach, aged 78.

Thomas Page Grant, M.D. University of Louisville, Medical Department, 1874; Jefferson Medical College, Philadelphia, 1886; captain and assistant surgeon, Ky. N. G.; a member of the Association of Military Surgeons of the United States, and chairman of one of the important committees of that association, died at his home in Louisville, from heart disease, May 16, after an illness of eight months, aged 53.

John A. Cummings, M.D. John A. Creighton Medical College, Omaha, Neb., 1902; a member of the Nebraska State Medical Association and Douglas County Medical Society; demonstrator of anatomy in the Medical Department of Creighton University, and physician to the Old People's Home and Child Saving Institute, Omaha, died at his home, May 12, from pneumonia, after an illness of one week, aged 35.

William Q. Marsh, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor; for 18 years a practitioner of Sierra Mojada, Mexico; chief surgeon of the Mexican Northern Railroad and United States consular agent; one of the most prominent and beloved American physicians in Mexico, died in Providence Hospital, El Paso, Texas, April 21, after an illness of six weeks, aged 52.

Logan P. Tooley, M.D. St. Louis Medical College, 1872; a member of the Medical Society of the State of California, California Northern District Medical Society, and Glenn County Medical Society; district surgeon for the Southern Pacific Railway, and in charge of the Glenn County Hospital, died at his home in Willows, Cal., May 9, after a long illness, aged 58.

Alexander Grant, M.D. University of Buffalo (N. Y.) Medical Department, 1855; for many years a member of the South Dakota State Medical Association and Brown County Medical Society; one of the oldest practitioners of Aberdeen, S. D., died in the Brown County Hospital in that city, May 8, from paralysis, after an illness of several years, aged 82.

Milton Godfrey Planck, M.D. College of Physicians and Surgeons in the City of New York, 1870; a member of the Medical Society of the State of New York and the Schenectady County Medical Society; some-time coroner and physician of the county, died at his home in Schenectady, May 12, from cerebral hemorrhage, after a short illness, aged 65.

John W. Brennan, M.D. College of Physicians and Surgeons in the City of New York, 1862; a member of the medical societies of the state and county of New York; a California pioneer of 1849, and surgeon of Gen. H. Berdan's sharpshooter regiment during the Civil War, died at his home in New York City, May 10, from cancer, aged 77.

Isaac M. Ridge, M.D. Medical Department of Transylvania University, Lexington, Ky., 1848; one of the earliest residents and practitioners of Kansas City, Mo.; for several years city physician of Kansas City, and a member of the city council, died at his home in Kansas City, May 7, after an illness of nearly a year, aged 81.

Thomas M. Marcellus, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1878; formerly a practitioner of Sleepy Eye, Minn., and later editor and publisher of the Charlottesville (Va.) *Morning News*, died at his home in Charlottesville, May 6, from carcinoma of the stomach, aged 55.

Casper S. Decker, M.D. College of Physicians and Surgeons in the City of New York, 1861; who retired from practice five years later; some-time commissioner of the State Reformatory and one of the supervisors of Elmira, N. Y., died at his home in that city, May 7, from influenza, after an illness of four months, aged 87.

David S. Pinnell (Years of Practice, W. Va.), for many years a practitioner of Grafton, W. Va.; surgeon in a West Virginia volunteer regiment during the Civil War, and physician of Taylor County, died at his home in Grafton, April 15, from pulmonary edema, after an illness of two weeks, aged 64.

David Wallace Edmiston, M.D. Rush Medical College, Chicago, 1873; a member of the Illinois State and DeWitt County medical societies; a veteran of the Civil War and an esteemed practitioner of Clinton, Ill., died at his home in that city, May 10, after an illness of two weeks, from pneumonia, aged 69.

Franklin Blair, M.D. Jefferson Medical College, Philadelphia, 1884; of Princeton, Ind.; a member of the Indiana State Medical Association and Gibson County Medical Society, died May 11 at the Princeton Sanatorium, of which he was one of the founders, of typhoid fever, after a long illness, aged 47.

Charles Laight, M.D. College of Physicians and Surgeons in the City of New York, 1868; who served as interne in the New York Hospital for two years after his graduation, and was then connected with the New York Eye and Ear Infirmary until 1880, died in Rome Italy, March 31, aged 60.

G. C. Head, M.D. Medical Department of the University of Nashville, 1876; of Alvarado, Texas; a member of the State Medical Association of Texas and Johnson County Medical Society, died suddenly, May 8, from hemorrhage of the lungs, while making a professional call near Alvarado.

William W. Griggs, M.D. Medical College of Virginia, Richmond, 1863; a member of the Medical Society of the State

of North Carolina and Pasquotank County Medical Society; a Confederate veteran, died at his home in Elizabeth City, N. C., May 5, after an illness of four weeks, aged 65.

Frederick P. Pfeiffer, M.D. Penn Medical University, Philadelphia, 1863; surgeon of the Fifth Artillery, United States Army during the Civil War; for several terms a member of the city council of Camden, N. J., died at his home in that city, May 7, after a lingering illness, aged 65.

Edward A. Norton, M.D. Reformed Medical College of Georgia, Macon, 1861; a member of the Tennessee State Medical Association and Marshall County Medical Society, and at one time representative in the state legislature, died at his home in Cornersville, Tenn., May 7, aged 69.

Alexander McIntosh, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1858; who had retired from active practice, but was probate judge of Antigonishe County, N. S., up to the time of his death, died at his home in Antigonishe, February 27, aged 75.

Mason Parker, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1903; a member of the Maine Medical Association and Franklin County Medical Society, died at his home in Rangeley, May 5, from pleuro-pneumonia, after an illness of eleven days, aged 35.

Noah Shepardson, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1870; for many years a practitioner of Fremont, Ohio, and Rockford, Ill.; a veteran of the Civil War, died at the home of his son, near Fremont, Ohio, May 8, from paresis, aged 71.

Howard S. Ohltenburg, M.D. University of Louisville (Ky.) Medical Department, 1892; president of the Leflore County (Miss.) Medical Association, died at his home in Sidon, Miss., April 4, from tetanus, after an illness of thirty-six hours, aged 35.

George F. Arney, M.D. Jefferson Medical College, Philadelphia, 1878; for many years a specialist in diseases of the eye, ear, nose and throat in Altoona, Pa., died at a hospital in Philadelphia, May 3, after an illness of two years, aged 54.

Daniel DeWitt Harnden, M.D. Geneva (N. Y.) Medical College, 1844; one of the oldest practitioners of Chemung and Tioga counties, New York, died at the home of his son in Waverly, N. Y., May 6, from senile debility, aged 87.

Shuler Craft, M.D. Denver and Gross College of Medicine, Denver, Colo., 1905; of Vermejo, N. M., died May 12, at the Denver County Hospital, where he had served as interne, from pneumonia, after an illness of four days, aged 28.

Charles J. Keegan, M.D. Rush Medical College, Chicago, 1858; a member of the American Medical Association, and a practitioner of Millersburg, Ind., for more than half a century, died at his home in Millersburg, March 7, aged 75.

Martin R. Bainter, M.D. Starling Medical College, Columbus, Ohio, 1873; formerly of Muskingum County, Ohio, but more recently a resident of Florida, died at his home in Daytona, Fla., May 6, from hemorrhage of the lungs.

William H. Kuntz, M.D. Chicago Homeopathic Medical College, 1888; some time a member of the board of health of Newcastle, Del., died at his home in that place, May 4, from septicemia, after a long illness, aged 61.

Joseph A. McKee, M.D. Jefferson Medical College, Philadelphia, 1896; formerly assistant in the nose and throat clinic at Jefferson Hospital, died at his home in Petersburg, Pa., January 25, from pleuro-pneumonia, aged 38.

Melvin C. Millet, M.D. University of Minnesota, College of Medicine and Surgery, Minneapolis, 1895; a member of the American Medical Association, died at his home in Rochester, Minn., May 6, from nephritis, aged 39.

William Elmo Kurtz, M.D. University of Maryland School of Medicine, Baltimore, 1903; formerly assistant surgeon in the United States Navy; a resident of Cambridge, Md., died in Denver, April 28, from tuberculosis.

John McGill, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1861; died at his home in Okolona, Ark., February 23, from obstruction of the gall duct, after an illness of three months, aged 69.

Joseph N. Medberry, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1874; a pioneer practitioner of Webster City, Iowa, died at his home, May 1, from paralysis, after an invalidism of several years.

John C. Riley, M.D. University of Louisville (Ky.) Medical Department, 1881; of Pilot Point, Tex., died May 5, from injuries received during the cyclone which destroyed Hemming, Tex., April 27, aged 54.

Lewis Perry Atkins (Years of Practice, Iowa); a practitioner of medicine for sixty-one years, died at the home of his daughter in Muscatine, Iowa, from paralysis, after an illness of one week, aged 82.

Charles A. Dusinberre, M.D. College of Physicians and Surgeons in the City of New York, 1849; a member of the Wayne County (Pa.) Medical Society, died at his home in Honesdale, Pa., May 12, aged 83.

James Harvey Pleasants, M.D. St. Louis Medical College, 1873; a member of the Oregon State Medical Association and Multnomah County Medical Society, died at his home in Portland, May 7, aged 73.

Daniel L. Hetrick, (Years of Practice, Pa., 1869); a veteran of the Civil War and a practitioner of Pleasantville, Pa., for forty years, died at his home in that place, May 4, from heart disease, aged 62.

George D. Craven, M.D. Keokuk, (Iowa) Medical College, 1897; of Drummond, Mont., died at the Sisters' Hospital, Missoula, May 12, from pneumonia, after a short illness, aged 35.

Willard Greenfield (Years of Practice, Pa.); for more than 50 years a practitioner of Pennsylvania, died at his home in Erie, February 26, after a long period of invalidism, aged 80.

Robert Orr Crist, M.D. University of Maryland School of Medicine, Baltimore, 1903; died at his home in Boswell, Pa., May 6, from hemorrhage following tonsillitis, aged 29.

William S. Martin, M.D. Jefferson Medical College, Philadelphia, 1864; a Confederate veteran, died at his home in Leaksville, N. C., from paralysis, Nov. 2, 1906, aged 72.

John D. Chaffee, M.D. Hahnemann Medical College of the Pacific, San Francisco, 1887; died at his home in Long Beach, Cal., May 2, after an illness of one week, aged 63.

John C. Sturgus, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1883; died at his home in Vashon Island, Wash., May 6, after a brief illness, aged 48.

Thomas James Baird, M.D. Rush Medical College, Chicago, 1889; died at his home near Victor, Mont., April 13, from pneumonia, after a short illness, aged 42.

James O. Ware, M.D. Starling Medical College, Columbus, Ohio, 1863; died at his home in Lake Charles, La., May 10, after an illness of ten days, aged 80.

Albert Henry Humes (Act of 1894, Massachusetts), for 20 years a practitioner of Boston, died suddenly at his home in Woburn, Mass., May 7, aged 52.

Reuben Bigelow Burton, M.D. Albany (N. Y.) Medical College, 1855; died at his home in New York City, April 22, after a short illness, aged 79.

Charles C. McCrillus, M.D. Miami Medical College, Cincinnati, 1898; of Muncie, Ind., died May 6, at Las Vegas, N. M., after a long illness.

William P. Sutherland (Years of Practice, Ill.); died at his home in Stillwell, Ill., April 15, aged 74.

Deaths Abroad.

P. Poirier, M.D., professor of anatomy at Paris and author of a manual of dissection, etc., died May 4. Several months ago he faced the diagnosis of inoperable cancer of liver and pancreas, and kept a detailed record of his symptoms and other points that might aid in the diagnosis of the disease in others. His promising career as anatomist, surgeon and clinical lecturer was thus cut short at the age of 51.

G. Gabritschewsky, M.D., director of the Bacteriologic Institute at Moscow, died April 6, of pneumonia, aged 47. His works on serum treatment and immunization are well known.

H. Magnus, M.D., professor of ophthalmology at Breslau, and author of numerous works on this specialty, and also on the history of medicine, died April 22, aged 65.

C. Féré, M.D., a prolific writer on subjects connected with nervous and mental affections and perversions, died at Paris, April 22.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

SYMPATHETIC VOMITING OF PREGNANCY IN THE MALE.

To the Editor:—I have seen several cases of sympathetic vomiting, nausea, etc., in the male, similar in every respect to the

symptoms we see in pregnant women. Some physicians go so far as to deny that anything of the kind takes place in the male. Please enlighten me on this subject. DR. N. W. MOORE.

ANSWER.—Our correspondent's observations are sufficient answer to the purely arbitrary denial of an occurrence which has been often observed, although not frequently mentioned in medical literature.

LAWS GOVERNING PRACTICE IN FOREIGN COUNTRIES.

BISMARCK, N. D., May 12, 1907.

To the Editor:—I read in THE JOURNAL that some physician had described in some German medical paper the various qualifications necessary to practice in foreign lands. I have searched diligently but can not find the item. M. M.

ANSWER.—The article was by J. Schwalbe, on *"Zulassung zur aerztlichen Praxis im Auslande,"* in the *Deutsche med. Wochschr.*, Nos. 1 and 12, Jan. 3 and March 21, 1907, vol. xxxiii. This weekly is published by Georg Thieme, Rabensteinplatz 2, Leipsic, Germany, at $8 a year. The American Medical Association issues a paper bound booklet of 112 pages, giving an abstract of the "Laws Regulating the Practice of Medicine" in the United States and elsewhere. Eleven pages are devoted to the laws in Europe and other parts of the world outside of America. A copy of the latest edition will be sent to any address on receipt of thirty cents.

PAINFUL HEEL.

TOLEDO, OHIO, May 15, 1907.

To the Editor:—Will you kindly tell me where I can find a description of the so-called "painful heel?" The patient complains of pain when walking, in the plantar structures of the feet, immediately in front of the heel. T.

ANSWER.—This condition is briefly referred to by Bradford and Lovett in their work on "Orthopedic Surgery," but has received little notice by other authors. J. J. Nutt devotes a recent article to it in THE JOURNAL, Jan. 19, 1907. He explains its causation as due to shortening of the gastrocnemius, or Schaffer's foot, called by Schaffer "non-deforming club-foot." The condition is often relieved by supporting the arch of the foot, although no deformity may be apparent. A fact noticed by some patients confirms Nutt's view of the etiology, viz., the support of the foot is ineffective until high heels are worn. The high heel evidently relieves the tension on the gastrocnemius.

THE FOURTH DISEASE.

CROTON-ON-HUDSON, N. Y., May 16, 1907.

To the Editor:—What is Dukes' disease and under what other name may it be found? DR. T. J. ACKER.

ANSWER.—Dukes' disease is an infectious, contagious fever, closely resembling mild scarlet fever and by some held to be identical with it. Most references will be found under the title "fourth disease," a name given by Dukes, referring to its possible classification as a fourth disease separate from the three similar ones—measles, German measles and scarlet fever. It has also been designated Filatow-Dukes' disease on account of the previous observations of Filatow. The subject was discussed fully in an editorial in THE JOURNAL, Feb. 9, 1907, the editorial containing complete references to the literature. A somewhat exhaustive review is published in the U. S. P. H. & M.-H. Service Public Health Reports, vol. xxii, No. 19, May 10, 1907.

FORMULA FOR SAPO VIRIDIS.

ST. PAUL, May 15, 1907..

To the Editor:—Please publish a recipe for a not too expensive liquid soap. Would Tinctura Saponis Viridis, with a little oil of lavender added, and made of or with denatured alcohol, meet the case in your opinion? L. H.

ANSWER.—Liniment of soft soap (linimentum saponis mollis), official in the U. S. Pharmacopeia, contains 650 grams soft soap, 20 c.c. of oil of lavender flowers, and alcohol sufficient to make 1,000 c.c. You no doubt will find it satisfactory unless you object to the odor of the soft soap which is not completely disguised. The following formula, published by M. I. Wilbert, has been used with advantage in the operating rooms of the German Hospital, Philadelphia, and was found to replace satisfactorily the more expensive commercial products:

Cottonseed oil, 300 parts; alcohol, 300; water, 325; sodium hydrate, 45; potassium carbonate, 10; ether, 15; phenol (carbolic acid), 25 parts. To the oil contained in a bottle, add 100 c.c. of water and 200 c.c. of alcohol; add the sodium hydrate and shake or stir occasionally until saponification has taken place, then add the remaining portion of the alcohol, and the potassium carbonate dissolved in the water; lastly, add the phenol and the ether and mix or shake well. Keep in well-corked vials, and, if possible, at a temperature not below 10 or 12 degrees C. (50 to 53.6 F.), so as to prevent solidification, though it readily reliquefies on exposure to gentle heat. This soap is light yellow, has a distinctly alkaline reaction, produces a copious lather, and possesses a not unpleasant ethereal odor. A good soap for the toilet may be produced by omitting the ether and carbolic acid and substituting a little essential oil, such as oil of rose-geranium or oil of bergamot.—(*Amer. Jour. Pharm.*, April, 1902, 172-175.)

The use of denatured alcohol is not to be recommended, since, as supplied to the trade, it contains benzine (gasoline) and wood alcohol.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending May 18, 1907:

O'Connor, R. P., asst.-surgeon, will, in addition to his present duties at Fort Crook, Neb., on May 11, temporarily assume charge of the office of Chief Surgeon, Department of the Missouri, Omaha.

Richard, Charles, surgeon, is detailed member of board of officers to meet at Washington, D. C., to consider the subject of purchase of ground for a rifle range in the vicinity of Washington.

Vedder, Edward B., asst.-surgeon, on arrival at San Francisco, will proceed to Fort Douglas, Utah, for duty.

Pipes, Henry F., asst.-surgeon, on arrival at San Francisco will proceed to the Army General Hospital, Washington Barracks, D. C., for duty.

Bushnell, George E., surgeon, granted 30 days' leave of absence.

Moseley, Edward B., asst.-surgeon general, retired from active service on account of disability incident thereto.

Patterson, R. U., asst.-surgeon, granted two months' leave of absence.

Maus, Louis M., asst.-surgeon general, promoted as such, with rank of lieutenant-colonel, to date from May 10, 1907.

Wilson, William H., surgeon, promoted as such, with rank of major, to date from May 10, 1907.

Foster, Charles L., asst.-surgeon, granted 10 days' leave of absence.

Reno, William W., asst.-surgeon, granted leave of absence, to take effect on the arrival of another medical officer at Fort Riley, for 20 days, or so much thereof as he may be able to take advantage of before sailing for the Philippine Islands.

Deshon, George D., surgeon, granted four months' leave of absence on surgeon's certificate of disability, to take effect on or about June 12, 1907, with permission to go beyond the sea.

Truby, Willard F., asst.-surgeon, granted leave of absence for one month.

Purnell, Harry S., asst.-surgeon, ordered to proceed to Denver for the purpose of appearing as a witness before the retiring board at that place.

Sanford, Joseph L., contract surgeon, returned to duty at Fort Washington, Md., from accompanying troops from Fort Ethan Allen, Vt., to San Francisco.

Whitney, Walter, contract surgeon, left Fort Wadsworth, N. Y., and arrived at Fort McPherson, Ga., for duty.

Miller, Albert L., contract surgeon, relieved from further duty in the Philippines Division, and ordered to report June 1, 1907, for duty at the U. S. Military Prison, Fort Leavenworth, Kansas.

Rebert, Michael A., ordered from Fort Terry, N. Y., to his home, York, Pa., for annulment of contract.

Slayter, John T. H., contract surgeon, returned to Fort William Henry Harrison, Mont., from temporary duty at Fort Missoula, Mont.

Wallace, George S., contract surgeon, granted leave of absence for one month, about June 1, 1907.

Le Hardy, Julius C., contract surgeon, arrived at San Francisco, on the transport *Thomas*, on leave of absence for three months from the Philippines Division.

De Quevedo, Luis G., contract surgeon, ordered from San Juan, Porto Rico, to temporary duty at Henry Barracks, Porto Rico.

Dunbar, Lee R., contract surgeon, ordered to Fort Terry, N. Y., for duty.

Long, Charles J., dental surgeon, left Fort Missoula, Mont., for duty at Fort Yellowstone, Wyo.

Wolven, F. Homer, dental surgeon, left Fort Hamilton, N. Y., for duty at Fort Niagara, N. Y.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending May 18, 1907:

Longabaugh, R. I., assistant surgeon, ordered to the Naval Hospital, Annapolis, Md.

Richards, T. W., surgeon, detached from Naval Hospital, Norfolk, Va., May 19, and ordered to the *Kansas*.

Ohnesorg, K., passed assistant surgeon, detached from the *Mayflower* and ordered to the Navy Yard, Boston, Mass.

Rossiter, P. S., passed assistant surgeon, detached from the Naval Academy and ordered to the *Nevada*.

Oman, C. M., passed assistant surgeon, detached from the *Ohio* and ordered to the *Arkansas*.

DeLancy, C. H., passed assistant surgeon, detached from the Navy Yard, Washington, D. C., and ordered to the *Florida*.

Dykes, J. R., passed assistant surgeon, detached from naval station, New Orleans, and ordered to the *Mayflower*.

Stuart, M. A., assistant surgeon, ordered to the Naval Hospital, Norfolk, Va.

Duhigg, J. T., assistant surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to the *Severn*.

Jones, A. McK., acting assistant surgeon, detached from duty with the Naval Recruiting Party No. 4, June 1, and ordered to duty at the Naval Recruiting Station, Chattanooga, Tenn., June 3.

Bacon, S., acting assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Station, New Orleans.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended, May 15, 1907:

Pettus, W. J., asst.-surgeon general, granted leave of absence for 2 days, from May 9, 1907.

Stoner, Geo. W., surgeon, granted leave of absence for 2 days from May 13, under Paragraph 189 of the Service Regulations.

Carmichael, D. A., surgeon, granted leave of absence for 15 days from May 28, 1907.

Brooks, S. D., surgeon, authorized to proceed to San Pedro, Cal., not oftener than once in 3 months on station business.

McIntosh, W. P., surgeon, re-assigned to duty at Portland, Me., effective May 28, 1907.

Guiteras, G. M., surgeon, directed to proceed to Gulf Quarantine Station for temporary duty, on completion of which to rejoin his station at Mobile.

Rosenau, M. J., passed asst.-surgeon, granted leave of absence for 1 day, May 11, 1907, under Paragraph 189 of the Service Regulations.

Gardner, C. H., passed asst.-surgeon, assigned to duty on the U. S. Revenue Cutter *McCulloch*.

Mathewson, H. S., passed asst.-surgeon, directed to report at Bureau, en route from Pomfret, Conn., to Pittsburg, Pa.

Lavinder, C. H., passed asst. surgeon, leave of absence granted for 1 months from April 24 amended to read 16 days only.

Grubbs, S. B., passed asst. surgeon, granted leave of absence for 14 days, from May 16, 1907.

Von Ezdorf, R. H., passed asst.-surgeon, granted leave of absence for 2 days.

Amesse, J. W., passed asst.-surgeon, leave of absence granted for 14 days from May 14, amended so as to be effective from May 19, 1907.

Frost, W. H., asst.-surgeon, granted leave of absence for 1 day, May 12, 1907.

Herring, R. A., asst.-surgeon, directed to proceed to Ellis Island, N. Y., reporting to chief medical officer for duty.

Bryan, W. M., asst.-surgeon, directed to proceed to New Orleans and report to the medical officer in command for duty and assignment to quarters.

Lanza, A. J., asst.-surgeon, directed to proceed to San Francisco and report to the medical officer in command for duty and assignment to quarters.

Bailey, C. W., acting asst.-surgeon, granted leave of absence for 7 days, from May 20, 1907.

Onuf, B., acting asst.-surgeon, granted leave of absence for 5 days, from May 6, 1907, under Paragraph 210 of the Service Regulations.

Goodman, F. S., pharmacist, granted leave of absence for 2 days, from May 13, 1907, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 17, 1907:

SMALLPOX—UNITED STATES.

Florida: Duval County, Jacksonville, April 27-May 4, 1 case; Santa Rosa County, 3 cases.
Georgia: Augusta, April 30-May 7, 1 case.
Illinois: Belleville, April 20-27, 1 case; Springfield, May 2-9, 2 cases.
Indiana: Elkhart, May 4-11, 1 case; Indianapolis, April 28-May 5, 5 cases; South Bend, April 28-May 11, 8 cases.
Iowa: Ottumwa, April 28-May 4, 7 cases.
Kansas: Lawrence, April 1-30, 2 cases.
Kentucky: Louisville, May 2-9, 3 cases.
Louisiana: New Orleans, April 27-May 4, 9 cases.
Massachusetts: Chelsea, April 27-May 4, 1 case; Lawrence, 4 cases; Pittsfield, May 4-11, 1 case, 1 death.
Michigan: Detroit, April 28-May 11, 9 cases; Holly, Dec. 10-April 3, 75, estimated.
Minnesota: Stillwater, April 1-30, 8 cases.
Missouri: St. Joseph, April 27-May 4, 10 cases; St. Louis, 1 case.
New York: Buffalo, April 27-May 4, 2 cases; New York, 3 cases; Niagara Falls, 2 cases.
North Carolina: Greensboro, April 27-May 4, 3 cases.
Ohio: Toledo, April 27-May 4, 2 cases.
Pennsylvania: New Castle, April 1-30, 1 case.
South Carolina: Charleston, April 1-30, 1 case.
Tennessee: Memphis, May 4-11, 1 case.
Texas: Bell County, May 6, 3 cases; San Antonio, April 27-May 4, 1 case.
Virginia: Richmond, April 27-May 4, 1 case.
Washington: Spokane, April 27-May 4, 13 cases.
Wisconsin: Milwaukee, April 27-May 4, 6 cases.

SMALLPOX—FOREIGN.

Austria: Trieste, April 13-20, 2 cases.
Brazil: Bahia, March 23-April 13, 17 cases; Para, April 13-27, 4 cases, 3 deaths; Rio de Janeiro, March 30-April 14, 3 cases, 1 death.
Canada: Sherbrooke, April 1-30, 44 cases; Vancouver, April 20-27, 1 case.
Chile: Coquimbo, April 13, present; Iquique, present.
China: Hongkong, March 23-30, 20 cases, 16 deaths.
Columbia: Barranquilla, April 6-13, 1 death.
Cuba: Habana, May 3, 1 case (on S. S. *Alphonse*).
France: Paris, April 20-27, 8 cases, 1 death; St. Etienne, April 1-15, 1 case.
Germany: General, April 13-26, 18 cases.
Great Britain: Aberdeen, April 13-20, 1 imported case; Liverpool, April 20-27, 7 cases.
India: Bombay, April 9-16, 4 deaths; Calcutta, March 30-April 6, 87 deaths; Madras, April 6-12, 1 death.
Italy: General, April 22-29, 18 cases; Palermo, April 13-20, 1 case, 1 death; Torre Annunziata, April 27, 11 cases, 4 deaths; Turin, April 7-21, 5 cases, 1 death.
Mexico: Jalapa, April 28-May 3, 2 deaths.
Portugal: Lisbon, April 13-20, 11 cases.
Russia: Moscow, April 6-13, 15 cases; Odessa, April 13-20, 15 cases, 4 deaths; Riga, April 13-20, 13 cases.
Spain: Barcelona, April 10-20, 4 deaths; San Feliu de Guixols, April 20-27, 1 death; Valencia, April 20-28, 9 cases.
Turkey in Asia: Bassorah, March 6-13, 2 cases.

YELLOW FEVER.

Brazil: Manaos, April 13-20, 1 death; Para, April 13-27, 10 cases, 8 deaths; Rio de Janeiro, March 30-April 14, 11 cases, 9 deaths.
West Indies: Trinidad, Port of Spain, April 13-19, 2 cases, 1 death.

CHOLERA.

India: Bombay, April 9-16, 2 deaths; Calcutta, March 30-April 6, 56 deaths; Rangoon, March 30-April 6, 7 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, May 10-12, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Brazil: Bahia, April 6-13, 2 cases, 1 death; Para, April 13-27, 4 cases, 3 deaths; Rio de Janeiro, March 30-April 13, 3 cases, 2 deaths.
Chile: Antofagasta, April 13, 20 cases, 7 deaths; Santiago, April 13, present; Taltal, April 13, present.
China: Hongkong, March 23-30, 2 cases, 2 deaths.
India: General, March 23-30, 62,897 cases, 53,681 deaths; Bombay, April 9-16, 461 deaths; Calcutta, March 30-April 6, 290 deaths; Rangoon, March 30-April 6, 109 deaths.
Peru: Chepen, April 3-10, 6 cases, 2 deaths; Lambayeque, April 3-10, 1 death; Lima, April 3-10, 3 cases, 2 deaths; Paita, April 3-10,, 9 cases, 9 deaths; Trujillo, April 3-10, 7 cases, 5 deaths.
Turkey in Asia: Djeddah, March 31-April 14, 46 cases, 46 deaths; Tor (quarantine station), March 31, 1 case, 1 death.

Society Proceedings.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 4-7.

Arizona Medical Association, Bisbee, May 28-29.
South Dakota State Medical Association, Sioux Falls, May 28-30.
Amer. Laryn., Rhin. and Otol. Society, New York, May 30-June 1.
American Academy of Medicine, Atlantic City, N. J., June 1-3.
American Association of Medical Examiners, Atlantic City, June 3.
American Gastro-Enterological Association, Atlantic City, June 3-4.
American Proctologic Society, Atlantic City, June 3-4.
American Urological Association, Atlantic City, June 3-4.
Maine Med. Assn., Lewiston, June 12-14 (changed from June 5-7).
Massachusetts Medical Society, Boston, June 11-12.
Medical Society of the State of North Carolina, Morehead City, June 11-13.
Rhode Island Medical Society, Providence, June 13.
Medical Society of New Jersey, Cape May, June 25-27.

STATE MEDICAL ASSOCIATION OF TEXAS.

Thirty-ninth Annual Meeting, held at Mineral Wells, May 7-9, 1907.

The President, DR. G. D. FOSCUE, of Waco, in the Chair.

According to reports received, this meeting is characterized as a short, enthusiastic business session. The scientific work received less attention than at any meeting for years. The attendance was about 500. The reports of the officers were of more than usual interest, especially the report of the secretary, which showed that the membership during the year increased from 2,622 to 2,921, and the report of the treasurer, which showed that the association is in splendid financial condition.

The legislative committee report was received with much enthusiasm because the committee had secured passage in the legislature of a new medical practice act and an anatomic bill.

The issuance of the American Medical Directory was considered to be one of the events of the year, and the opinion was expressed that the directory will prove of immense value in organization work.

Insurance Fees.

The report of the committee on insurance fees was very exhaustive and met with the unqualified approval of the association. The following resolutions were adopted in the House of Delegates by a unanimous vote:

Be it Resolved, That the House of Delegates of the thirty-ninth annual session of the State Medical Association of Texas, in joint session with the scientific body, representing 137 county societies and 2,921 members of the state medical profession, does protest against the maintenance, by insurance companies, of fees for medical examiners less than the $5.00 flat rate.

Resolved, further, That insurance companies chartered in Texas be hereby requested to establish in this state, at an early date an examiner's fee of not less than $5.00.

Resolved, further, That this House of Delegates endorses and approves the action of its committee on insurance and urges the active continuance of their efforts along the lines outlined in its recent report.

Officers Elected.

The following officers were elected for the ensuing year: Dr. C. E. Cantrell, Greenville; vice-presidents, Drs. H. D. Barnes, Tulia; D. S. Wier, Beaumont, and A. B. Small, Waxahachie; trustees, Drs. Joe Becton, Greenville, W. E. Sturgis, Stephenville, five years; secretary, Dr. I. C. Chase, Fort Worth, three years; councilors, Drs. Walter Shropshire, Yoakum, James A. Hill, Groveton, and J. M. Britton, Cisco.

COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION.

Third Annual Conference, held at Chicago, April 29, 1907.

(Continued from page 1707.)

REPORT ON ADMISSION TO ADVANCED STANDING.

The following was read by Dr. John M. Dodson, chairman of the Special Committee on Admission of College Graduates to Advanced Standing in the Medical School, appointed by the Council:

QUESTION FOR CONSIDERATION.

We understand the question submitted for consideration to be as follows: As the medical colleges now require for admission at least a diploma from a four-year high school, or a full equivalent therefore, and for graduation attendance on four annual sessions of at least seven months each, shall a student who possesses the bachelor's degree from a literary or scientific college (four years' course), and who has taken work in branches which constitute part of the medical curriculum, be given credit (a) for the medical work completed, or (b) for time; that is, be allowed to secure the medical degree after attendance on less than four annual sessions?

HISTORY.

For many years certain literary and scientific colleges have offered courses in the medical branches which correspond closely to part of the required work in the medical curriculum. As early as 1876 such courses were offered at Cornell University, somewhat later at Yale, and in 1887 the University of Wisconsin announced a definite course in general science antecedent to the study of medicine.

Pursuant to the request of many medical schools numerous other colleges have provided instruction in chemistry, physics, biology, embryology, histology, bacteriology and a smaller number in physiology and human anatomy. Commencing about 1888 medical colleges have given credit for such work, and with few exceptions have permitted graduates of such literary and scientific colleges to enter the sophomore year of the medical course. In 1896 the medical practice act in New York was changed so as to preclude the granting of such advanced standing. This statute was amended in 1903, giving the board of regents the right to permit such practice under certain conditions.

In 1898 the statute in Minnesota was modified so as to require that every applicant for license should have spent four annual sessions in residence in a medical college. This statute was applied by the examining board of Minnesota to the individual and not to the college until November, 1904, when it was announced by that board that thereafter the diploma of any medical college granting such advanced standing would be refused recognition by the board.

Subsequently a similar ruling was made in Kentucky, in Michigan, in Iowa, and recently in a number of other states the medical boards have announced their intention to put in force a similar provision. As it stands at present, therefore, no medical college can grant advanced standing, in time, for work done in a literary or scientific college without subjecting its graduates to the rejection of their diplomas in several of the states.

The subject has been investigated and discussed very extensively during the last few years by the American Academy of Medicine, the Association of American Medical Colleges, and by several of the medical examining boards.

PRESENT STATUS.

A. *Attitude of the State Board of Medical Examiners.*—The following questions were sent, with a circular letter requesting answers, to all the examining boards in the United States:

1. Does your board recognize the diploma of a medical school granting advanced standing for work done in other than medical colleges, as entitling the holder thereof to examination for license to practice?

2. Where against advanced standing or time credits is your decision operative, against the college, or only against the individual to whom such credit has been allowed?

3. On what grounds does your board make its ruling for or against such advanced standing?

Replies were received from 37, which must be classified according to Question 1 under three heads:

First. Those having no authority, the question being decided by statute. The following 18 states are in this class: Maryland, Arizona, Georgia, Texas, Massachusetts, Mississippi, Missouri, West Virginia, Tennessee, Arkansas, Rhode Island, Utah, South Carolina, Oregon, New York, Colorado, Wyoming, Washington.

Second. Those boards recognizing a time credit advanced standing. The following 8 boards are in this class: Nevada, Indian Territory (three boards), New Hampshire, Connecticut, Illinois, Nebraska.

Third. Those boards which do not recognize a time credit advanced standing. The following 11 boards are in this class: Michigan (applies ruling against college), Vermont (not stated), Iowa (against college), Indian Territory, Southern District (against individual), District of Columbia (against individual), California (against individual), Wisconsin (against college), Indiana, except where credit is fully equivalent to first-year course (against individual), Ohio (same as Indiana), Minnesota (against college), New Jersey (against individual).

B. *Practice of the Medical Colleges.*—Recent correspondence with the medical colleges of the United States, conducted by two members of the committee, results in the finding that of the 146 colleges from which replies were secured, 102 grant no advanced standing in time for work done in a literary or scientific college, but require that every student shall have attended four annual sessions in a medical college before he may become a candidate for graduation.

Forty-three medical schools continue to admit the holders of the bachelor's degree to the second year of the course, either (a) without restriction excepting that first-year branches which have not been covered are to be made up; or (b) on condition that the work in the scientific college has comprised certain specified branches which are usually included in the first year of the medical curriculum.

Several of these communications state that the former practice of granting such advanced standing has been abandoned only in order to comply with the rulings of the examining boards which are adverse thereto, and not because the faculty believes such ruling to be logical or wise. In other institutions the faculties are said to be in entire accord with the ruling which abolishes this practice.

It is proper in this connection to call attention to the fact that the ruling of any particular state medical examining board affects not simply the medical schools in that state but applies to every medical school whose graduates may seek a license to practice in that state. The effect of a ruling of a single state board is therefore far-reaching.

C. *The Attitude of the Literary and Scientific Colleges.*—The colleges of arts believe that some provision should be made by the medical authorities for examining the work done by them in pure science for which, under proper conditions of teaching and equipment, credit might reasonably be asked from medical schools. Some colleges are offering courses of this kind, and others are likely to do so. The total number of independent colleges (by which term is meant colleges without professional school affiliations) at present able to offer genuine medical work is small. The number will increase gradually, hence it will be a matter of no great difficulty to determine

just what colleges that ask credit are doing, and what amount of credit they are entitled to have.

RELATION OF LITERARY COLLEGE TO MEDICAL COLLEGE.

The college of arts without question should have the privilege, under suitable conditions, to articulate its work with that of the medical schools. There is a common ground between the college and the medical school where subjects are both cultural and medical. The college will continue to teach these subjects with increasing efficiency. For the work done they will continue to ask credit, until the medical schools decide to become true university schools, that is, require the bachelor's degree for admission; and until the universities give up their so-called combined courses. These two possibilities are remote. Meanwhile, the college is entitled to preserve in its integrity its full four-year course; and has, or ought to have, the same right in its own territory to provide for a reduction of time, if reduction is necessary, as the composite institution which we call the university.

It is fair to assume that a first-class college should be able to give instruction in the pure medical sciences at least as adequately as second-class medical schools. The colleges claim more than this. They believe that there is justice in their contention, and simply ask that their claims, based on work actually done, receive reasonable consideration. They ask for no favors or concessions of any sort.

The colleges believe that credit for work should be provided for by actual inspection, preceded by a written report from the college applying for consideration. This report should be made on a blank provided by the medical authorities, and should furnish data sufficient to determine whether the college is entitled to a special visit of inspection.

The decision, finally, should rest on the quality of the work done. If the colleges actually give courses that are deserving of credit they should receive credit. All that the colleges ask is a decision based on personal knowledge. It is not reasonable nor just, without actual knowledge, to declare that it is not possible for them to meet the requirements of the medical schools.

To carry out the suggestions here made, a board of inspectors should be provided, whose duty it should be to pass on the quality of the work already offered, and also to suggest courses suitable to be offered in colleges of arts; to define what should be the standard of such courses, what should be the quality and aim of the teaching, and under what conditions it should be done. In this way there would be formed a basis of cooperation, which would be productive of educational results quite as important for the medical school as for the college.

THE COMBINED COURSE FOR THE DEGREES OF A.B., B.S., OR PH.B. AND M.D.

Having an important bearing on the question under consideration is the practice in vogue in a large and increasing number of universities with medical departments of offering a combined course in science and medicine of six or seven years beyond the high school, leading to a bachelor's degree and the degree of doctor in medicine.

In the large majority of these institutions the requirement for admission to the medical course proper is a high school diploma, but the longer course comprising two years of college study antecedent to the medical curriculum is advised. In four only are the two years of college work absolutely required as a prerequisite, viz., the University of California, the University of Minnesota, Western Reserve University, and Rush Medical College in affiliation with the University of Chicago.

In several the fundamental branches constitutes the curriculum of the first two years, is taught in the university proper, removed by some distance (in most cases many miles) from the college where the clinical branches are taught. Such is the arrangement at the University of California, the University of Texas, the University of Kansas, the University of Nebraska, the University of Chicago, the University of Indiana, the University of West Virginia, and the University of North Carolina.

In two other institutions the work of one or both of the first two years may be taken at the university proper; these are Cornell University and the University of Illinois.

In all of these institutions the conditions under which the first two years of the medical curriculum are given really differ from those obtaining in the detached literary or scientific colleges only, in that the whole instead of a portion only of the first two years' work is given, and second, that in the detached college the student does not matriculate as a *medical* student in an institution chartered as such.

THE ARGUMENT FOR.

It is argued by those who favor the granting of advanced standing in the medical school to the holders of the bachelor's degree, that:

1. There is great need in the medical profession for men of a broader, more thorough culture and training such as the college course affords; that the granting of one year of credit encourages prospective medical students to take the college work first, and by virtue of the mental power and grasp acquired in a college course, they can study the medical branches to better advantage, and advance more rapidly than the student without such training.

2. The best instruction in some of the medical branches, conspicuously in chemistry, physics, histology, embryology, biology, bacteriology (in some schools also gross anatomy and in physiology) is offered in some of the literary and scientific schools, and that good work should be recognized wherever it is accomplished.

3. The instruction in these branches given in the detached colleges is, in many cases at least, quite as thorough and effective as that given in the universities having medical departments, and much better than that given in many medical schools. The branches are taught by men who are devoting their whole time to teaching and research in their respective lines.

4. To recognize two years of medical work given in a university which chances to have a medical department, and to refuse recognition for work done in the detached colleges, to the extent of its actual value—be it one year or less—is to discriminate unjustly and illogically against the college.

THE ARGUMENT AGAINST.

The principal arguments of those who oppose the granting of advanced standing may be stated as follows:

1. No medical branches can be properly taught excepting by medical men and in a medical atmosphere, by which, presumptively, is meant the atmosphere of a school where clinical medicine is being taught.

2. While in some of the literary and scientific colleges those medical subjects which are offered are well and thoroughly taught, in others the instruction is very poor indeed. In other words, that there is a great inequality in the colleges, some demanding high requirements and giving most thorough instruction, while others are extremely lax in this respect. It is urged that no discrimination has been exercised by some of the medical schools in granting advanced standing, and that the boards of medical examiners have no means of determining the quality of these literary and scientific colleges, or, if they had, of compelling the medical schools to so discriminate.

THE ARGUMENTS EXAMINED.

As to the first argument it is perhaps sufficient to point out that the same objections obtain in reference to the first two years' curriculum of the university medical schools to which allusion has already been made, yet these have already been recognized by the state boards, and their practice appears to have become an established and approved custom. It may be further said that as between custom of having the fundamental branches, anatomy, physiology, etc., in the hands of medical practitioners (who are doing this work as an incidental diversion to general practice, and, to whom in many cases, the interests of the important branch assigned to them is quite secondary to that of a clinical chair appended thereto), and the teaching of those branches in a non-medical

atmosphere by experts, the argument is surely, under present conditions, quite in favor of the latter alternative.

To the second argument there attaches much more weight. There can be little doubt that the custom of granting advanced standing has been very loosely exercised by some medical colleges. One of the members of the committee is cognizant of an institution, which at least until recently, admitted students substantially from the grammar school, granted the bachelor's degree in two sessions of fifty weeks each, and permitted the student in the same interval to take the course for, and to receive the degree of graduate in pharmacy. Yet the bachelor's degrees of this institution were recognized as good for a year of advanced standing in several medical schools. This looseness of practice by many of the medical schools in granting advanced standing to the graduates of good and poor schools alike, without discrimination as to the real work they have had, seems to your committee the one serious objection to the practice. Can this difficulty be obviated? Is it possible to devise a plan by which the boards of medical examiners can classify the literary and scientific colleges, specifying those from which credits may be accepted by the medical schools and forbidding the granting of advanced standing to graduates of unworthy colleges? We believe such a procedure to be feasible and advantageous; that it can be accomplished by the same methods that should be adopted in discriminating between medical colleges, classifying those which are recognized by the several boards.

It may here be pointed out, however, that no adequate basis for discrimination has, so far as we can learn, ever been put into operation by any state board. Mere inspection of the published announcements, catalogues or other publications of a college, and the current rumor as to its character, afford a totally inadequate basis for recognition. To be able justly to decide whether or not a medical college shall be "recognized," and its diplomas accepted as a prerequisite for licensure, a board must know by personal inspection of its members, or an authorized agent, something of the buildings, equipment, methods and character of the institution. This matter, in at least one instance, has been the subject of legal decision by the courts.

RECOMMENDATIONS.

Your committee would, therefore, recommend that the Council on Medical Education take steps to secure the institution by the several medical examining boards of a system of thorough inspection and investigation of the medical schools of this country, the results of such investigation to be made the basis for recognition of the diplomas of these schools. The Council of Education, through carefully selected officials, might undertake this investigation, provided the boards would appoint these persons as their duly authorized agents for this purpose. Your committee recommends that the Council of Education offer to the state examining boards to undertake this work of inspection.

It is further recommended that this system of inspection be extended to include the literary and scientific colleges which offer instruction in any of the medical branches and whose graduates make claim for advanced standing in the medical schools. That on the basis of the report of such investigators the medical examining boards be requested to classify these colleges, stating what medical subjects are adequately taught in each case, and advising as to the amount of credit which may be given to the graduates of each institution, for (a) work done, and (b) in time of required attendance in the medical college.

In the judgment of your committee such an arrangement would tend to promote a better understanding and a more effective cooperation between the medical schools and the institutions for general learning, an especial desideratum at the present time when one year of college work is soon to be demanded by many medical schools and by several state boards as a prerequisite for admission to medical study.

JOHN M. DODSON,
J. H. T. MAIN,
W. S. FULLERTON.

It was moved that the report be adopted. Seconded.

DISCUSSION.

DR. WILLIAM A. SPURGEON, Indiana:—I would like to ask Dr. Dodson if he can give the citation of the case in which the members of the examining board were required by the court to make an inspection of the institution referred to.

DR. DODSON:—This case occurred in Wisconsin. About three years ago the State Board of Wisconsin refused to admit a young man to examination for licensure, because he possessed a diploma from one of the Chicago night schools. A curious decision was rendered by the court. The attorney for the plaintiff, who sued for mandamus against the board, set up in his plea that the board was basing its decision on inadequate information. They had never seen the school, he said, and did not know anything about it; that the school had as good an equipment as any other school. The court therefore instructed the board to investigate this school, and if, after personal investigation, they were justified in refusing it recognition, they could withhold the permission, but otherwise the mandamus would hold, and the board came down here post haste and investigated this school.

DR. SPURGEON:—Have you the title of the case?

DR. DODSON:—I have not. I think Dr. Curren, a former president of the Wisconsin State Board, can give the facts.

DR. W. T. SARLES, Wisconsin:—I wish to say that an investigation was first made, and the court ruled that the investigation was not sufficient; that time enough was not spent in attending the lectures and in examining the equipment. We then ordered a committee to investigate and re-report. On re-reporting, the court decided in our favor. The last Wisconsin legislature gave full power to the board of saying what is a reputable school, and on that basis we got a decision.

DR. S. L. JEPSON, West Virginia:—I believe the committee recommended in its report that a commission be appointed to investigate certain institutions. There are two institutions of a literary character in which I am somewhat interested. The University of West Virginia has a medical course of two years, and we have a contract with some of the Baltimore medical schools whereby those two years shall be recognized. I am trustee of the Washington and Jefferson College, which has a pre-medical course, and I think we have an arrangement with the West Pennsylvania Medical College. I have doubted the advisability of recognizing these, especially where the teaching is done in a separate city. I think the recommendation of the committee should be adopted, and that this pre-medical course should not be recognized until after an investigation has been made and reported on favorably. I have not been favorably impressed with the fact that they give the same class of teaching that is given in the medical schools, and I think the recommendation of the committee is an important one.

DR. WILLIAM H. WATHEN, Kentucky:—If we are ever to arrive at any practical conclusion as to giving advanced standing for work done outside of the medical course, or for a bachelor's degree, it must be as a result of the united action of the state examining boards of the country. It would be better, it seems to me, to refer the whole question that has been discussed by this committee to the state examining boards of this country; and these examinations should be made through these boards to make them effective in all states. I move that the report of this committee, read by Dr. Dodson, be referred to the national examining boards for the purpose of investigating and reporting and deciding just what standing, if any, shall be given for a bachelor's degree, or for work done outside of a regular medical college.

Seconded by Dr. Means.

THE CHAIRMAN:—There is no organization which includes all the examining boards in its membership. One of the most desirable things that could happen would be a strong organization which represented every state examining board. But that is difficult of accomplishment. I think the same thing can be accomplished, as you suggest, by placing the responsibility, which, I understand, the report suggests, on the state boards. That, of course, can be done.

DR. W. S. FULLERTON, Minnesota:—I am a member of this committee; therefore, I do not wish to second the motion that has been made to adopt this report, or to support it. Before this matter can be referred to the examining boards of the country, it seems to me, that there should be something definite for them to act on, and that something definite is just this matter which, I understand came to us as an offer from the Council on Medical Education, that it would furnish the inspecting end of this work. Then it comes before the state examining boards to adopt these inspectors as an official part of their machinery. Minnesota has already endorsed that move-

ment officially, so that we are in a position to accept the work done by this investigating committee as our own investigation. This committee is made a part of our official board; it is our inspecting bureau, and we are on record as adopting that. I would like to see this matter brought before the different state examining boards and have them take such action as we have taken.

DR. WILLIAM A. SPURGEON, Indiana:—This is one of the perplexing questions we have to meet in connection with the work of the state medical examining boards. While the work of this Council is important and the various boards throughout the country are watching its work with interest, yet it must not be forgotten that this Council is possessed of no legal authority, and that its work is advisory. The motion made by Dr. Wathen a moment ago that this report be referred to the national medical examining boards, or to the American Confederation of Examining Boards, is open to the same objection, that no national organization of medical examining boards has any sort of authority. Its work is advisory only. The authority to act is vested in each separate state medical examining board, and there comes the perplexing question in connection with the solution of our problem—is it to be referred back to these boards? We should keep in mind that those who are members of examining boards should be particular just now because we occupy a peculiar relation. Those of us who are in this Council by direction of the governors of our states, and who are members of state medical examining boards, have no right to bind our boards by our action here. We can not do it, so that we are occupying a rather peculiar position. If we vote to adopt this report, then we may be in a way regarded as binding the boards we represent, which I have said we can not do. It makes it rather embarrassing for us to vote on the question because of that peculiar relationship.

DR. W. S. FULLERTON, Minnesota:—I do not wish for one moment to entertain the idea that the action of this body would bind the individual state boards. Each state board is an entity, acting by itself. I only wish to repeat that Minnesota has taken action endorsing this plan and is willing, when this report has been sent to it, to act on that report. That is as far as we can go.

THE CHAIRMAN:—Probably Dr. Spurgeon was not here when the chairman read his report. I said we were not a legal body: that the state medical examining board is properly and always will remain the body in control of medical education in its particular state, and Dr. Spurgeon is right in saying that whatever we do here is simply in an advisory capacity. I wish to throw out this thought, however, that what the men, who are here to-day representing medical colleges and state boards and the profession generally, determine on carrying out, if it is broad and correct in principle, will undoubtedly eventually be carried out by the state boards. All we can do with such a report as this is to suggest to your respective state boards that this report is possibly a solution of this question. Of course, it will take time to work it out.

DR. H. W. ORR, Nebraska:—It is obvious that what this conference and Council are accomplishing is not beyond what they may accomplish to some extent, and I am strongly in favor of proper credit being given by medical colleges for work previously done. I think the recommendations of the committee are important and should be fulfilled, if possible. I therefore think it would be expedient to appoint a committee from this conference to pursue the same line of investigation regarding pre-medical work done by the medical colleges themselves or by other schools.

DR. B. F. BAILEY, Nebraska:—I believe it is an admitted fact that the work of this Council is only advisory and that it has no legal authority. The same is true of the American Confederation of Reciprocating Boards; but although they have no authority, they have power. Therefore I am heartily in favor of Dr. Wathen's motion.

DR. J. W. BENNETT, New Jersey:—The medical laws of some of the states, for instance, New Jersey, would not permit us to delegate the inspection of these schools to other than members of our own board. Evidently the laws of Wisconsin are of the same nature from the report of the case that has been cited. Indiana, I understand, is the same. That is one thing we will have to bear in mind.

DR. A. RAVOGLI, Ohio:—The Ohio State Board now recognizes one year of advanced standing of any one who has in a literary college covered all the sciences which are taught in the first year of a medical college: and the board of preliminary examinations gives an exact report of the work which is done in these literary colleges, and if it is acceptable, it serves as a substitute for what is done in medical colleges.

DR. W. J. MEANS, Ohio:—This conference can do nothing less than adopt this report, and when it is once adopted as the sentiment of this conference, then we can dispose of it in the direction we wish. I understand that these organizations are largely advisory, the same as this Council; they are not legal bodies, and unless we have something that is crystallized to present to these state boards, where there is legal authority, we might as well not meet. Therefore, I move that the report now be adopted, as the sense of this conference, and then we can dispose of it afterward in the direction we choose.

This motion was seconded and carried and the report declared adopted.

A MEMBER:—I suggest that the report be referred to the presidents of the various state boards, with the request that they bring the matter before their respective boards.

THE CHAIRMAN:—We have another important committee to hear from before we adjourn, namely, the Committee to Consider Details as to the Requirement, in Addition to a Four-Year High-School Education, of a Year to be Devoted to Physics, Chemistry, Biology and One Language, as a Prerequisite to the Study of Medicine. This report will be presented by Dr. John H. Long.

DR. LONG presented the report as follows:

REPORT OF THE SPECIAL COMMITTEE ON PRELIMINARY MEDICAL EDUCATION.

The Committee on Preliminary Education in Sciences and Languages, appointed last winter by the Council on Medical Education, has undertaken to secure information on certain points from which conclusions pertinent to the present inquiry may be drawn. Some time before the appointment of this committee, consisting of Professors Long, Bardeen and Piersol, the Council made a direct effort, through correspondence with a number of the more prominent universities and colleges of the country, to discover the amount of work which should be considered as a year's equivalent in the several topics, and how much of this work in sciences and languages could be completed in a single year at the various institutions addressed. In other words, it was sought to learn how far the usual, or an elective, freshman course would go toward satisfying the requirement of the Council with reference to this preliminary year.

The replies received by the secretary, Dr. Colwell, were far from satisfactory; in fact, in many cases they were very misleading and gave no clear idea of what the universities could do in the matter which would be of value in helping on with the plans of the Council and the medical schools interested in the proposition of raising the standard of work in medical education. It was even evident that in some of the answers the university and college authorities had dodged the issue.

With these facts in view our committee decided to ask for more definite information, and in such a way as to leave no loophole for misunderstanding. Accordingly, the following circular was printed and sent to all the colleges, universities and technical schools listed in the last report of the Commissioner of Education. There are about 500 names in the list, and the circular letter was sent out in February last.

THE CIRCULAR LETTER.

"CHICAGO, Feb. 25, 1907.

"*Dear Sir:*—Because of the rapid advances made in medical science in the last ten years it is becoming necessary to greatly increase the work given to students of medicine to enable them to take advantage of the modern points of view and follow understandingly the many valuable recent discoveries. It is not possible to increase the work within the limits of the four-year courses as now given in our best schools of medicine, as these courses are already overcrowded. On the other hand, it does not appear to be at present possible to lengthen these courses to five years, as has been sometimes suggested. The only remaining alternative is to require of students beginning the study of medicine a broader preliminary training than is usually called for from young men or women entering the medical school. This training should embrace some of the work now given in the medical school in the first or freshman year, with certain subjects in addition, and may be outlined as follows:

"1. A year's work in general biology.

"2. A year's work in chemistry.

"3. A year's work in physics.

"4. A year's work in a modern language, preferably German.

"All of this work is supposed to be of the grade given in the freshmen or later years of our best colleges. It may be and should be preceded by elementary high school work in the same subjects, especially in the languages. It is understood that a year's work which may be counted toward the bachelor's degree, is the equivalent of four recitations or lectures a week in each of four subjects through the usual nine months' course.

"The following statement may make clearer what is understood by a year of college work in the several subjects:

"*Biology.*—The course here should include lectures or recitations, and laboratory exercises amounting to about six hours of work a week through one college year. In the laboratory the following types, or their equivalents, should be studied: (a), a protozoon (a ciliate and ameba); (b), a celenterate (hydroid, hydra or sea-anemone); (c), an annelid (earthworm); (d), an arthropod (preferably a decapod); (e), a vertebrate (preferably a frog or fish), with a view of a general comparison of the plan and internal structure with that of the human body. When possible a study of tissues should be made, first with the unaided eye and then with the microscope, to demonstrate the relation of cells to intercellular substance, as in epithelium and connective tissue. It is desirable that the student should study other fresh typical specimens of elementary tissues, as muscle, nerve and blood.

"If the college work in biology is wholly or largely of a zoologic character, as outlined above, it is desirable that it should have been preceded by some work in botany in the high school.

"*Chemistry.*—The student entering the medical school should have completed a substantial course in general inorganic chemistry, with experiments, elementary qualitative analysis, an outline, at least, of volumetric analysis, including the theory of the fundamental processes, and finally, a short course in organic chemistry sufficient to serve as an introduction to physiologic chemistry. All this work in chemistry should consume, at least, about ten hours of recitation and laboratory work per week through a year.

"Inasmuch, however, as few freshman courses cover as much ground as is here indicated, the work in general inorganic chemistry, with laboratory experiments and qualitative analysis, may be taken at present as the minimum amount which would satisfy the needs of the medical schools under the new requirement.

"*Physics.*—This college work is supposed to be preceded by an elementary or preparatory course in the high school or academy. The subjects here of the greatest importance for the study of medicine are heat, light and electricity. Satisfactory work in these branches should cover probably three recitation hours and five or six laboratory hours through a college year. The student should acquire some practical knowledge of the microscope, the spectroscope, of thermometry and specific heat, and some familiarity with simple electric measurements.

"*Languages.*—In addition to the work of the high school or academy in these subjects the student should have enough college training to enable him to read one foreign language, preferably German or French, with some degree of ease.

"Up to the present time most of our medical schools have drawn their students from the graduates of the high schools. A few medical schools have required college graduation for entrance, but it is recognized that this relation is not yet, in general, realizable. It is hoped, however, that in order to meet the urgent demand for better preliminary education now being made by the leading schools of medicine, the colleges of the country will be prepared to furnish in the first years of their courses to prospective medical students such a curriculum as is outlined above.

"This letter is sent out by a committee of the Council on Medical Education of the American Medical Association in an effort to discover just what the colleges of the country can do for the instruction of this class of students who usually do not enter college at all, but who now, under the press of changing conditions, must do some college work before being considered properly prepared to enter upon the study of medicine.

"Will you kindly answer the following questions:

"How much of the work outlined above is your institution prepared to give in *one year* to students who have a high school training?

"How much of this work can you give in *a year and a half*, that is to the middle of the sophomore year, to students equipped in the same way as above?

"If not at present able to furnish the courses in the specified time, can you, in view of the apparent demand, give such courses beginning with the college year 1908-9?

"The point to be kept in mind is that the college should be able to furnish this desired instruction within a period corresponding to the freshman and perhaps a part of the sophomore year. A blank is enclosed for a reply, which will be greatly appreciated, as will also any comments or suggestions which you may make.

"In presenting its report the committee desires to prepare for publication a list of those colleges which are or will be able to offer courses substantially like those outlined above.

"Yours truly,

"C. R. BARDEEN,
"G. A. PIERSOL,
"J. H. LONG,
"*Committee.*"

REPLY TO CIRCULAR LETTER ON PRELIMINARY MEDICAL EDUCATION.

Name of Institution.....

Location .....

This institution is prepared, or will be prepared, to furnish class work or laboratory instruction to Freshman students in Biology, Chemistry, Physics and one foreign language, preferably German or French, of a character corresponding to that described in the accompanying circular letter, and within the time specified, as shown in the table below. Work which can not be done in the Freshman year may be done as explained under "Comments."

NUMBER OF HOURS GIVEN EACH WEEK THROUGH THE FRESHMAN YEAR.

	GIVEN AT PRESENT.		TO BE GIVEN BY 1908-09.	
	LECTURE OR CLASS.	LABORATORY.	LECTURE OR CLASS.	LABORATORY.
Biology	.....	.....	.....	.....
Chemistry	.....	.....	.....	.....
Physics	.....	.....	.....	.....
Language	.....	.....	.....	.....

Signed.....

Comments:

The phrase "preliminary year in biology, chemistry, physics and languages" is somewhat vague, and your committee, after much discussion, undertook to define it to some extent, as appears in the wording of the circular letter. To be of real value the courses taken in a preliminary year should make it possible for the student to begin a higher grade of work immediately after entering the medical school. At the present time most of our medical schools teach the elements of biology, chemistry and physics, and it is probably no exaggeration to say that two-thirds of the time of the medical freshman is taken up with work which may be, or in fact, should be done elsewhere, and better, too.

It was this consideration which led your committee to outline in a general way what should be covered in the several preliminary courses. It will be seen that the suggested exercises in biology cover work which would serve as a beginning in histology and physiology as well as in comparative anatomy; the chemistry work would cover that given in our usual medical freshman year, while the courses in physics would take the place of work now given in a perfunctory way in many of our medical schools, but which is becoming every year more and more necessary as the many relations of this fundamental science to medicine become more and more tangible.

NEW CLASSIFICATIONS NEEDED.

A modern German classification divides physiology into the two groups of studies comprised under the titles of biochemistry on the one hand, and bio-physics on the other. A glance through any one of the larger manuals of physiology in use in our medical schools discloses a justification of this division, and suggests also the desirability of relegating much matter from the class-room in physiology to the class-room in physics. Besides this, it is becoming evident that modern pathology is making every day wider inroads not only into the fields of chemistry, but also into the domain of physics, and taking all things together, the committee felt that it was not going too far in calling for the amount of physics suggested in the circular letter. No explanation of any length

was made in deference to the language work, as little difficulty from this direction was expected.

RESULTS OBTAINED.

Now as to the results. The replies received were 211, of which the larger number were plain and not ambiguous; a few were not as clear as might be desired, from which it follows that a perfectly sharp classification can not be made from the data secured. But the results are close enough for the present purpose. Sixteen of the answers came from state universities, 8 from agricultural and technical schools, and 187 from other institutions, some of which include the best known colleges and universities in the country. The replies from 15 of the state universities and from 7 of the agricultural and technical schools showed a good general agreement with our proposed courses of study. The replies from 75 other institutions were also favorable, although it appears likely in a few cases that the schools in question have not the facilities for properly doing the work called for, as will appear from an inspection of the lists given below. On the other hand, about 30 well-known institutions made replies which could not be looked on as wholly favorable.

The situation in some of the older schools seems to be best expressed by the comments made by President Hadley of Yale, as follows: "The demand for places in our undergraduate courses is so far in excess of what we can readily meet that we can hardly arrange to take men for one year, with a view of letting them leave us at the end of that time. We must, I think, arrange our courses for men who expect to stay longer." In this list along with Yale we must place Cornell, Princeton, Trinity, Williams, Lafayette, Union, Tufts, Vanderbilt, Bowdoin, Oberlin, Hamilton, Syracuse and others of known rank. It is evident that the schemes of instruction in these schools are not flexible enough to allow a freshman to elect as large an amount of work as our committee suggested. The greatest difficulty seems to be with the work in physics, which naturally presupposes some acquaintance with trigonometry, and which in consequence is usually thrown over to the sophomore year. The work in chemistry, biology and languages could in most cases be provided for.

HOSTILITY TO THE PLAN.

The replies from about 80 institutions gave evidence of lack of interest in the matter, lack of equipment for the work, or, finally, a distinct hostility to the plan. As illustrating the last situation the answers from two small colleges, one in Pennsylvania and one in Illinois, must be quoted. The first reads as follows:

> In reply to your letter I would say that we can not justly give the course you suggest in less than two years, except in rare cases. We have found, in our experience, that the students who took a full B.S. course received the best results. We even discourage the short two years' course, because it has so little of general culture work, and the American College stands for culture. If professions will continue to admit men on purely technical preparation and disregard the college, the college nevertheless must stand for the ideals that have made it. Your suggested one-year course is unpractical. You require so much laboratory work in chemistry and physics that none but the exceptional freshman can take them. The number of hours of your proposed course outnumber the hours which educators, knowing the capacity of the human brain and mind, have fixed as a maximum. Should your plan obtain the work must be superficial. For some time we college men have watched the plans of the medical profession and we are astonished that there is so little appreciation of sound pedagogics.

From the president of the Illinois school the following reply came:

> In response to your inquiry concerning our work in science relative to its value for medical education, permit me to say that we offer all and more than you require, but not in the freshman year. We carry science study through four years of the college course. It appears to us on careful consideration that what you require as preliminary to the medical course could not be well crowded into one year. Three different lines of science study with extended laboratory practice is more than students can advantageously carry in one year, not to speak of the addition of a modern language. Certainly, such crowding could hardly meet the requirements of a good college course. Besides, freshmen are not qualified for the more advanced work in the sciences. Moreover, it seems hardly fair to us that colleges should be asked to do such hurried preparatory work for the professional schools. Why might not law and theology come with similar requests? In what manner could any college do justice to its students under such pressure? Would it not be perfectly fair for the professional schools to adjust their courses to the needs of college graduates? That would certainly greatly improve professional efficiency. We are quite ready to maintain such courses as the professional schools can recognize; but we can not see our way clear to comply with the requests of your letter of inquiry.

It is evident that these men do not fully understand the situation and in addition that their answers are dictated by a somewhat natural self-interest; but in the opinions of other men better able to appreciate our position, we have noticed a similar doubt as to the wisdom of attempting so much work in a single year. In this connection there are two questions to consider: first, the practical one of arranging hours to avoid a conflict of studies, and yet present all the work suggested to be taken, and, second, the possibility of carrying this number of hours successfully. In actual time the scheme provides for about 25 hours of work each week through the college year, divided between class-room and laboratory and omitting organic chemistry. Now allowing for a reasonable division of time in the work in the sciences, this is not more than a fair student should be expected to carry, and not more than students carry well in many of our best schools. It must be admitted that students who are expected to devote a good fraction of their time to athletics and fraternity interests can not carry such courses, but we are far from believing that the present tendency in these matters in some of our schools is a desirable one or one which may be expected to persist.

COMPLETE COURSE IDEAL BUT NOT PRACTICABLE.

It goes without saying that a college course of four years would give a prospective medical student a much better groundwork than the one we are talking about, but we are concerned with the practical question of what we can get rather than with what we should like to have. The members of your committee recognize fully the value of college training as an introduction to medicine, but we must keep in mind what is actually practicable under the conditions which obtain in the United States. Now while we recognize that it is hardly likely that any very large number of our medical schools are prepared to make a requirement of two years of college work for entrance, it is probably true that the best of them will be ready to ask for one solid year of work as a prerequisite. We are called on to determine if the facilities are available, and the answer must be read from the replies to our letter. While the favorable answers are not as numerous as we could wish, there are still enough to indicate that when the preliminary year is actually decided on the facilities for securing the desired work will be forthcoming. A mistaken self-interest seems to deter some of the colleges from giving a favorable answer to our questions. It is evident that some of them are afraid they might lose a few students, who might otherwise stay longer, by offering courses which would lead to the medical school at the end of one year. We see the force of this, but, on the other hand, an increased number of freshman students would be taken in, and some of these in turn might choose to remain with the college. There would thus be compensation.

The situation in the southern states is the worst as far as facilities for preliminary work in the fields discussed is concerned, but in all other sections of the country there are several colleges in each state which seem to be ready and willing to give such courses. If attention is called to these through the pages of THE JOURNAL other institutions may be induced to fall into line and offer the desired work. On the whole, we consider the outlook a favorable one, and feel that enough support is in sight to warrant the schools of medicine in asking for the preliminary year of college work.

But in many of the colleges, for some time to come, it is likely that the prospective medical student will have to spend a year and a half or two years to get the desired training. Several college officials in replying to our letter state that the high schools do not send out their graduates with sufficient preparation in the first elements of the sciences to enable them to make rapid progress in the college science work. This is probably true.

Whatever the explanation of the difficulty is the preliminary college year must mean more than a year of actual work in many cases. But we believe the medical school should stand rigidly for that and insist on this amount of work whatever time it may take.

Below is the list of the colleges which sent favorable replies to our circular. Many of the colleges addressed sent no replies at all, but these are mostly institutions from which in reality but little could be expected. The list of the Commissioners of Education includes many "universities" which are but little better than academies. On the whole, a very fair proportion of answers were received.

STATE UNIVERSITIES.

Illinois.	Missouri.	Oklahoma.
Iowa.	Montana.	Oregon.
Kansas.	Nebraska.	Virginia.
Maine.	North Carolina.	Wisconsin.
Michigan.	North Dakota.	Wyoming.

TECHNICAL SCHOOLS.

Agricultural College of Utah.
Agricultural and Mechanical College of North Carolina.
Agricultural College of Connecticut.
Massachusetts Institute of Technology.
Rennselaer Polytechnic Institute.
School of Mines of South Dakota, Rapid City.
Throop Polytechnic Institute.

OTHER COLLEGIATE INSTITUTIONS.

Alfred University.	Buena Vista College.
Catholic University of America.	Center College.
Chicago University.	Clarksburg College.
Cincinnati University.	Coe College.
Colgate University.	Dickinson College.
Colorado University.	Earlham College.
Columbia University.	Emporia College.
De Pauw University.	Fairmont College.
Drake University.	Geneva College.
James Millikin University.	Greenville College.
Johns Hopkins University.	Hedding College.
Lawrence University.	Hillsdale College.
Lehigh University.	Hobart College.
New York University.	Huron College.
Northwestern University.	Illinois College.
Notre Dame University.	Kenyon College.
Ohio University.	Lake Forest College.
Ohio Wesleyan University.	Lenox College.
Purdue University.	Macalister College.
Rochester University.	McKendree College.
Stanford University.	Milton College.
Susquehanna University.	Olivet College.
Virginia Union University.	Ouachita College.
Washington University.	Parker College.
Washington and Lee University.	Penn College.
Western University of Pennsylvania.	Philomath College.
	Randolph Macon College.
Wooster University.	Richmond College.
Adelphi College.	Ripon College.
Adrian College.	Rockford College.
Amherst College.	Simpson College.
Augustana College.	State College of Washington.
Beaver College.	St. Johns College.
Berea College.	Union College (Nebraska).
Bethany College.	Ursinus College.
Blackburn College.	Wabash College.
Bridgewater College.	Whitworth College.
Brigham Young College.	Woman's College of Baltimore.

The following named larger institutions do not appear to be able to arrange for the courses as outlined:

Alabama State University.	Rose Polytechnic Institute.
Bowdoin College.	Smith College.
Bryn Mawr College.	Stevens Institute of Technology.
Buchtel College.	Syracuse University.
Carleton College.	Trinity College.
Cornell University.	Tufts College.
Dennison University.	Union College.
Florida State University.	Vanderbilt University.
Hamilton College.	Vassar College.
Hampden Sidney College.	Wellesley College.
Iowa College.	Wells College.
Lafayette College.	Williams College.
Oberlin College.	Worcester Polytechnic Institute.
Princeton University.	Yale University.

CHARLES R. BARDEEN,
G. A. PIERSOL,
J. H. LONG,
Committee.

THE CHAIRMAN:—I think the thanks of the conference are due this committee for the splendid piece of work they have done. They undertook an enormous task, one which required a great deal of time. What will you do with the report?

DR. VICTOR C. VAUGHAN, Michigan:—I move that the report be received with approval.

DR. WATHEN:—I second the motion.

DR. B. D. MYERS, Indiana:—As a suggestion toward solving this question, it seems to me it would be feasible, instead of requiring four years' Latin in high school work, as required for entrance, two years of Latin and two years of German should be required by the colleges, giving three subjects during each year, and one year in physics, chemistry and biology.

PROF. THOMAS F. HOLGATE, Evanston:—I think the question raised by the gentleman who has just taken his seat is rather pertinent, so far as the colleges are concerned. The requirement of the medical council of this interim year is a very important one, so far as the colleges are concerned, but it does not affect the colleges for the great majority of students; it only affects those students who come into college with their minds fully made up as to the study of medicine. A young man coming into college with his mind made up to study medicine can shape his course so as to meet this preliminary year in one year or in two years, as may fit the conditions of his college. I think there are very few of the colleges in the country where it will be made possible for a man to carry these four studies, as outlined in the report, in one year. I think if the answers are carefully scrutinized it will be understood from them that a college would offer no objection to a man doing this, and the curriculum is sufficiently flexible to meet it, but it is doubtful if it is possible for a college student to so arrange his program as to actually carry the work out in the one year. If the medical council will prescribe its four-year course, and then will put below it a preliminary year, which is defined in the terms of the committee's report, that to be superimposed on a four-year high school course, then it seems to me as feasible, and a man may have to take two years in his college to meet the requirements of this preliminary year. The possibility of putting in twenty-five hours of work in one year for the ordinary freshman of 17, 18 or 19 years of age is a difficult one. It is not easily handled.

THE CHAIRMAN:—How would it be if German were left out and simply biology and physics given?

PROFESSOR HOLGATE:—The question of German is not determined, nor has the last speaker indicated that the work may be done in a high school. A man may go to college with a fair reading knowledge of French or German, and at the end not figure in the year's course at all. If the medical council would prescribe that the student must enter a medical college with certain specific preliminary requirements—in other words, he must enter after graduation from a high school, showing a certificate that he has included certain specific studies, some of which perhaps he can not get in a high school, but will have to get in college. The ordinary graduate from a high school presents fifteen units of credit. If the medical college demands twenty units, and includes in that twenty, four units of the subjects here suggested, the extra four units will have to come from the colleges, and it will take one or two years more to show the need to secure these units. It would be well to show clearly what subjects should be included in the unit of physics, of chemistry, etc., so that the medical schools can at once build on these units, knowing that the student has covered certain topics. To say that a student has a year of chemistry may mean one thing; to say that he has a year of biology in a college means practically nothing, the way the work is carried on throughout the country. If the medical schools will define their units, as the report indictates, say in chemistry or biology, which a man may get in one year, then it will be all right.

THE CHAIRMAN:—Possibly a short explanation is in order at this time. In Great Britain, where they have a five-year medical course, the first year of the course is devoted to chemistry, physics and biology. These can be taken in a medical school or in a school of liberal arts. In France, Germany and Austria, where a five-year course is required, the first year of that five-year medical course is devoted to chemistry, physics and biology. The object in this country is to raise standards as soon as possible, to those of the other great powers. At present we are very much behind, and it has been the object of the committee to see how this can be worked out, and I am sure the members of the committee will be glad to have any suggestions that may be made by any delegate. I should like to see this committee continue, if they are willing to continue their work, during the coming year.

DR. GEORGE H. PRICE, Tennessee:—It is very evident from the report which has been read here this morning that something is wrong. Medical institutions have been reported as having been given twenty or even greater percentages of failures before state examining boards. It means that the medical colleges have not required their students on entrance to come up to the published requirements, or that these requirements have been enforced in a perfunctory way. However, if to a four years' medical course in all institutions throughout the country, with a minimum fixed preliminary requirement of a four years' high school education, we add on another one or two years, as has been indicated by the report of the committee, it will put beyond the reach of a large number of young men the possibility of entering medical colleges at all. I do not know how it is in all sections of the country, but I know how it is with us. A large number of men have made their own way; have passed through high school and have made enough

money to attend a medical college. Now, if we impose on such men an additional one year in some recognized institution, we may work a hardship.

DR. WILLIAM H. WATHEN, Kentucky:—From what has been said to-day, two-thirds, at least, of the colleges deemed worthy of recognition at this time can not practically comply with this so-called preliminary biologic course and exist. Of course, it is commendable in large universities to urge this, for the reason that it has been the fashion of late years for the academic department to recognize the work of the medical department. I think we should move slowly in this matter, and if we should adopt this and the state boards should enforce it, as outlined to-day, it will simply put out of existence three-fourths of the medical colleges of the United States.

DR. VICTOR C. VAUGHAN, Michigan:—According to the report made by the secretary, about forty-five medical schools have decided of themselves, without any special pressure from this Council or anybody else, to have from one to two years of college work before they admit to a medical college. The duty of this committee (and the members have done their work admirably) was simply to point out what should be included in the preliminary years. We are not trying necessarily to force the colleges to adopt one or two years, or anything of that kind. Forty-five colleges have decided that after 1910 they will require from one to three years. This committee was asked to pick out what subjects should be taught, and they have done so, and what they believe to be necessary to the proper teaching of modern medicine; it matters not whether it takes one or two years to get it.

High schools differ very much in the kind of courses they give, as well as in the thoroughness of the courses they give. In Michigan, for instance, a student can get an excellent reading knowledge of either French or German in his high school course, and he can take two years or three years of French or German if he wants to. If he did that he would not need to take extra French. Two years in a high school is as good as one in a university, and sometimes is as good as two in a university. I think there has been a misunderstanding. The idea on part of the committee was to point out the things necessary for the study of medicine.

I want to impress one other thing, namely, you can not teach modern medicine to a man who has not had these preliminaries. (Applause.) You can not teach the use of the microscope, the use of the ophthalmoscope and all these things to a man who knows nothing about physics. You can not teach physics to a man who does not know trigonometry. There is not a thing mentioned in the report that is not absolutely necessary for a man who is going to get the best out of medicine. He must know his chemistry, otherwise he can not build on rock; he is building on sand, and the reason why we have had so much quack medicine forced on us is largely because we do not know anything about chemistry. Was it necessary for Sollmann to report that alcoholic solutions of pepsin were no good? Any freshman student who knows his chemistry knows that alcohol destroys ferment.

I think the report of the committee was excellent. They are only urging that twenty-five hours be taken in the proposed college course, so you can arrange the course at five hours a week or less. Those subjects should be taught to every student.

DR. JOHN M. DODSON, Chicago:—I should like to make a plea for the young men. This is hardly pertinent to the report of the committee, but nevertheless it has a bearing on what has been said. It seems to me that we do not need to make a plea for the young men who are unfitted to enter medical colleges. What we need to do is to look after those medical colleges who are accepting young men that are unfit to enter medicine. These medical colleges are committing a crime, in my judgment, in permitting such men to enter. My sympathies go out to the young man who has gone into medicine in that way ignorantly, inadvisedly, who will wake up in four or five years to the fact that he is handicapped in the race; that he has entered a profession for which he is unfitted and can not make a living at it, and when he wakes up to that fact he is in much more serious straits than the members of any other profession. His time, money and best years of his life have been spent in a medical college, and he is not prepared to meet the exacting demands of the profession which he has entered. The lawyer can turn his attention to commercial pursuits and make a good income in doing commercial work. The minister can utilize the training he has received, but the medical man can not do that, unless he has been adequately prepared. Suppose twenty or thirty medical colleges should go out of existence through consolidation or because of increased requirements, would it hurt anybody except a few individual interests that are involved? We do not need 160 medical colleges in the United States. If we have 44 or 50 we shall have a great abundance to do the right kind of work, in my judgment.

DR. GEORGE H. PRICE, Tennessee:—There seems to be a slight misunderstanding of my attitude in regard to this matter. I am firmly convinced in my own mind that a good preliminary education is one of the essentials to the study of medicine. But if you have these colleges live up to that, it is all right; if they do not live up to it, it will be all wrong. The point I want to make is this: If we put on five years now to the medical course, it will not be a great while before we put on more. The time will come when only those institutions which have an academic department, in addition to the medical department, can be recognized as giving the necessary training.

THE CHAIRMAN:—I would like to entertain a motion that this committee be continued and instructed to bring in a further report next year. I think it is important to have a further report if this committee is willing to do so.

DR. B. D. MYERS, Indiana:—I move that the committee be continued and instructed to report at the next annual conference.

Seconded and carried.

On motion, the conference then adjourned until 2 p. m.

(To be continued.)

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-Second Annual Session, held at Washington, D. C., May 7-9, 1907.

(Continued from page 1713.)

Tuberculosis in Infancy.

DR. L. E. HOLT, New York, studied 67 cases of pulmonary tuberculosis in infants, in 80 per cent. the tubercle bacillus being found in the sputum. In 21 of the cases one or other parent was tuberculous, and in 6 a tuberculous person was in the house. Intestinal lesions were surprisingly few. In 42 consecutive cases of tuberculous meningitis, tubercle bacilli were found in the cerebrospinal fluid.

Hemorrhagic Diathesis in Bright's Disease.

DR. DAVID RIESMAN, Philadelphia, reported two cases of this affection, in men of 30 and 55, one bleeding from the mouth and skin, the other from mouth and bowels. He regarded toxemia as the cause of the hemorrhagic tendency. Autopsy was held in one, marked nephritis being found.

Secondary Carcinoma with Recurrence in Unusual Sites.

DR. GEORGE L. PEABODY, New York, reported this case occurring in a woman who four years previously had had removed a carcinoma of the right breast. Metastases were found in the thyroid, one suprarenal, both kidneys, one lung, in the wall of an old cerebellar cyst, and in one trunk of the cauda equina. Microscopically, there was diffuse infiltration of pia, of pons, medulla and cord. Only one similar case was found in the literature, that reported last year by McCarthy.

DR. S. SOLIS-COHEN, Philadelphia, who saw the case reported by McCarthy, called attention to the diagnostic value in that instance of dyspnea which persisted in the absence of local conditions to explain it.

Action of Intestinal Antiseptics.

DR. J. D. STEELE, Philadelphia, with bismuth salicylate reduced the amount of bacteria in the feces of three normal individuals. With betanaphthol the same result was obtained in two normal persons, but in one with gastrointestinal disturbance the bacteria were increased. In diseased intestines the self-resistant action appears to be diminished, and antiseptics may have an effect opposite to that intended. He believes that regulation of the amount and character of the food is the best method of checking bacterial growth in the intestinal tract.

DR. LEWIS A. CONNOR, New York, said that unless drugs exercise a selective action on bacteria they may do harm by destroying those which are needed in the intestine, as well as the harmful varieties.

Hygiene in Hospital Wards.

DR. D. L. EDSALL, Philadelphia, has studied particularly the infections of adults in nospital wards. He finds that nurses

in one hospital in Philadelphia show nine times the morbidity of typhoid fever as compared with the average citizen, and that patients in the hospital are 2.5 times more apt to contract typhoid than if they were not in the hospital. He has seen increase of symptoms in typhoid patients from the use of infected milk, and as the result of putting patients with other conditions, as diarrhea, in the wards with them. He showed by charts that groups of hemorrhages and also of perforation occurred in the hospital, at times weeks apart. To prevent these secondary infections, he has instituted certain measures. All milk for typhoid and seriously ill persons, unless certified, should be pasteurized. A special diet nurse is placed in each ward, she handling no contaminated objects. Patients' mouths are specially cleansed. Arrangements are being made for the daily sterilization of bedpans, urinals, etc.

DR. VICTOR C. VAUGHAN, Ann Arbor, said that the report on typhoid fever in the Spanish-American War shows that 60 per cent. of the cases were due to contact. The laity and the profession both insist on the rôle played by the fly in the transmission of the disease, but the report emphasizes the great importance of actual contact.

DR. GEORGE M. KOBER, Washington, said it must be remembered that nurses and internes are usually of the age when most susceptible to typhoid. What is true of the value of Pasteurization of milk in hospitals is also true of the general supply. Few milk epidemics are reported, except in England and America, because in other countries relatively little raw milk is consumed.

DR. WILLIAM H. PARK, New York, said that in one scarlet-fever ward 40 per cent. of the patients developed otitis media, nearly every one due to the same bacterium; investigation showed that the nurse used the same cup for every patient. In another instance a typhoid epidemic occurred among the nurses and internes who used the milk and oysters from the same storage place that was used for the patient's supply.

DR. E. G. JANEWAY, New York, emphasized the necessity for better care of nurses, who are specially exposed to diseases. Overwork, bad food, etc., render them more susceptible to infections with which they daily come in contact. In one hospital erysipelas in the smallpox ward ceased when the building was thoroughly cleaned and painted.

DR. A. C. ABBOTT, Philadelphia, spoke of a hospital interne who contracted diphtheria and was isolated until the usual negative cultures were obtained. He returned after a week's vacation, contracted coryza, and in three days one could almost track him in the ward by diphtheria cases, and the organisms were found in his nose and throat.

DR. S. SOLIS-COHEN, Philadelphia, has attempted to isolate patients in different hospital wards in the way of putting all typhoids in one, pneumonia cases in another and erysipelas in a third. When this was not practicable he found that those with one disease were apt to contract the other. Patients who can transmit disease should not be put in general hospital wards.

Antitoxin and Postdiphtheritic Paralysis.

DRS. M. J. ROSENAU and J. F. ANDERSON, Washington, detailed experiments with guinea-pigs showing the beneficial action of antitoxin in modifying diphtheritic paralysis and saving life. Early administration is the great point, but if this be not possible then larger doses should be given later. They saw no beneficial results from the use of antitoxin after paralysis appeared.

Effects of Egg-White and Its Split Products on Animals.

DRS. VICTOR C. VAUGHAN and MAY WHEELER, Ann Arbor, presented the results of experiments showing that the non-poisonous portion of egg-white is capable of sensitizing animals to unbroken egg-white. This is along the same line as the immunity induced to the typhoid and colon bacilli by the non-poisonous portions obtained from the substance. They believe that when this portion of egg-white is injected it acts on body cells and causes them to elaborate a special ferment which, when activated by a second injection, splits up the egg-white with the resultant effect of the poisonous portion. This it is believed occurs also with the typhoid or colon bacillus and accounts for the disastrous effect of the later injection of living organisms. They suspect that the non-poisonous portion of egg-white is made up of two parts.

SYMPOSIUM ON THE OPSONINS IN MEDICINE.

The Experimental Basis of the Opsonic Phenomenon.

DR. E. L. OPIE, New York, said that it is probable that all bacteria are susceptible to this action, though some seem refractory. He has found that saprophytes require the action of serum for phagocytosis. After fatal injections of staphylococci into the peritoneal cavity there collects a fluid which can not be opsonized. This suggests that inert substances may prevent the opsonic power of sera. The presence or absence of opsonins is no index of infection.

The Opsonins in Tuberculosis.

DR. EDWARD R. BALDWIN, Saranac Lake, said that the method is not sufficiently perfected to guide the administration of tuberculin in pulmonary tuberculosis.

Opsonic Index in Certain Acute Infectious Diseases.

DR. LUDVIG HEKTOEN, Chicago, considered the course of the opsonic index in typhoid fever, pneumonia, diphtheria and erysipelas. Indications are that in scarlet fever, also studied, the patient is from the first subject to the influence of the streptococcus, the opsonin of which appears to be the specific opsonin in this disease. In a series of cases of acute otitis the pseudo-diphtheria bacillus was found in 72 per cent. of cases with an opsonin specific for that bacillus. From this it appears evident that such bacilli are pathogenic. It is believed that typhoid and paratyphoid opsonins are distinct bodies and both are distinct from agglutinins. Relapses were all accomplished by a fall in the opsonic index. In general, the opsonins possess a high degree of specificity.

Summary of the Studies on Opsonins Carried Out at the Rockefeller Institute.

DR. E. R. SCHORER, New York, finds that normal individuals are subject to great variations in the opsonic index, the limits in a series of tests on ten persons being 0.7 and 1.5. Cases of erysipelas were particularly studied, the opsonic index being constantly neither higher nor lower than normal. Further, there was no relation between this and the clinical phenomena of the disease. The treatment of 50 cases by vaccines produced no constant modification of the disease or of the index. The duration of the treated cases was in general that of a series treated by antistreptococcic serum.

Summary of the Studies on Opsonins Carried Out at the Johns Hopkins Hospital.

DRS. L. F. BARKER and RUFUS COLE, Baltimore, first spoke of experimental work regarding the nature of opsonins. In rabbits they could produce no increase in the index to staphylococcus, but could to the typhoid bacillus. Fifteen cases of gonorrheal arthritis were followed throughout their entire course, the general impression being that the patients were somewhat bettered by the treatment. In cases of bone, joint and glandular tuberculosis the impression also was that they did very well. As to the accuracy of the opsonic index as a guide to the administration of vaccines, it appears to possess very little value as an indication.

Summary of the Studies on Opsonins Carried Out by the New York State Board of Health.

DR. W. H. PARK finds a considerable specificity of the normal opsonins. He showed that a very false impression may be gained if the opsonic index be taken only every two or three days. The difficulties of obtaining an accurate index are great. Even Wright himself admits that the careful observation of the clinical features of a disease is as good as an indication for vaccination as is the opsonic index. In some cases of furunculosis treatment did good; in gonorrheal vaginitis it was of no essential value.

DR. N. B. POTTER showed lantern slides illustrating first the sources of error in connection with the index, and second the effect of vaccine treatment in some cases. The sources of error include normal oscillation, source of the corpuscles,

thickness of emulsion and counting. Nothwithstanding these, the results of treatment thereby controlled certainly point to a promising future for the use of vaccines.

DR. C. E. NORTH detailed the results of a test whereby ten different laboratories made estimations of the same sera. The results varied considerably, the limits being something like 50 per cent.

(*To be continued.*)

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-second Annual Meeting, held at Washington, D. C., May 7-9, 1907.

(*Continued from page 1708.*)

A New Method of Version.

DR. A. F. A. KING, Washington, D. C., spoke of the correction of transverse presentations by the hitherto unrecognized factor of thigh pressure on the abdomen, induced either (1) by posture, or (2) by manipulating the lower limbs. The former, he said, is Nature's method of preventing and correcting cross-presentations; and in primitive races was daily exercised by the squatting posture during defecation, etc. Squatting is not a symmetrical proceeding; the two thighs do not press equally. One foot is flat on the ground and in advance; the other, in the rear, rests also on its toes. The thigh of the front foot will press high up on the breech end of the fetus; the thigh of the rear foot will press low down on the head, forcing it from the iliac fossa into the pelvic brim, as was illustrated by diagrams.

The Superiority of Primary Over Secondary Cesarean Section.

DR. EDWARD REYNOLDS, Boston, spoke of primary operations being determined in advance of labor and performed at an elected date, or with the advent of the first pains. Secondary operations may be performed as soon as a test in labor has shown that the natural powers are likely to fail, and before serious exhaustion sets in. Late operations are considered in the light of a last resort. Late sections are already discredited, while secondary sections are still the most frequent class. He gave the statistics of primary, secondary and late sections of the last ten years. Primary section is a very safe operation, while secondary section is only moderately safe. Late section is attended with a high mortality. In general, the mortality is roughly proportionate to the amount of labor endured before operation. Decision before labor is a matter of great moment. The doubtful cases are constantly narrowing and should be done away with. Accurate prediction of expected difficulty requires: Estimation of the shape and relation of the pelvis (measurements alone are entirely unreliable); of the probable muscular character of labor; of the size and ossification of the head. Methods of estimation of the maternal obstacles requires knowledge of the maternal powers (these can be foretold with considerable accuracy); and of the mechanical character of the head. He emphasized the value and importance of obtaining a previous history in multiparæ.

He submitted the following classification: (a) Undoubted Cesarean section cases; (b) cases clearly capable of delivery without Cesarean section; (c) doubtful cases. As to the treatment, in class (a) he would resort to primary section; in class (b), labor and the intrapelvic operations. In class (c) a final examination under ether at the date of election, and the method finally decided on and decision adhered to. The predetermination of methods is work for experts only. Lastly, he pointed out that a more friendly relation between the specialist and the general practitioner is desirable.

Pubiotomy.

DR. HENRY D. FRY, Washington, stated that pubiotomy is a satisfactory operation, so far as the operation itself goes, for enlarging the pelvic girdle in moderate degrees of pelvic contraction. It is easy to perform, and can be employed in simple flat pelves with a conjugata vera of 7 or 7½ centimeters. Separation of the severed bone for 4 or 5 cm. is usually sufficient to enable easy extraction with forceps. The principal objection to the operation is the difficulty encountered in the after-treatment. The pelvis must be immobilized and the patient kept in the dorsal position several weeks. Maternity institutions can overcome the objection to a large degree by the use of a special bed, as the hammock suspension bed, the Bradford frame, an ordinary hospital stretcher or a pelvic sling suspended from the ceiling and attached to a compound pulley. Ordinarily, after pubiotomy the evacuations of the bladder and bowels are attended with discomfort, and it is a hard task for the nurse to keep the parts clean. In consequence, therefore, of the unsatisfactory convalescence after pubiotomy, the operation will obtain in this country a limited field of usefulness as an elective operation.

The indications for pubiotomy may be stated as follows: A living child and some contraindication to Cesarean section. The usual conditions presented are: A moderate degree of pelvic contraction, which has been unrecognized generally, ineffectual efforts employed to deliver with high forceps, the women exhausted and infection probably started. If the child be dead, craniotomy; if alive, pubiotomy, in spite of the objections raised against it.

Induced Labor and Delivery by Abdominal Section.

DR. EDWARD P. DAVIS, Philadelphia, said that among obstetric operations there is none which in selected cases gives better results than induction of labor. This is especially true in disproportion between mother and child, whether caused by pelvic contraction, excessive size of fetus or prolonged pregnancy. Private patients are especially benefited by this operation, as they usually come under the care of the obstetricians early, and give him a better opportunity to study their cases than do hospital patients. Private patients who have passed through a disastrous first confinement are often safely delivered in subsequent labor by the induction of labor. Experience, however, and the study of statistics show that the induction of labor is not without serious disadvantages; it is a process uncertain in duration, often exposing the patient to considerable loss of rest and to prolonged suffering.

He strongly urges the importance of conducting cases of induced labor in such a manner that the patient shall be in favorable condition for a major operation, if necessary. He does not believe it is justifiable during induced labor to make efforts at delivery by forceps or version unless the conditions are such as to make it reasonably certain that these operations will be immediately successful. If engagement of the head does not develop during induced labor the use of forceps is a dangerous procedure. If the operator is sure of the size and contour of the pelvis, and reasonably certain of the comparative size of the fetus, version, where the head does not engage, is the safer operation. It is his practice to decline celiohysterotomy in all cases where forceps or version has been tried. In severely septic cases, the child being dead and unsuccessful efforts having been made at delivery, he believes that the Porro operation will give the best results. In cases where forceps or version has been tried without success, if the child is living, he believes that the consultant should again try whichever of these procedures he thinks best, utilizing Walcher's position if advisable; failing in these, craniotomy should be done. As to pubiotomy, a sufficient number of cases have been published to show that the operation is not without its dangers and disadvantages. All things considered, and especially when the fetal mortality is considered, the claims of abdominal section for safe delivery of mother and child can not be disregarded. He does not believe that at the present time a dogmatic opinion can be formed concerning any one method of delivery.

DISCUSSION.

(The papers of Drs. Reynolds, Fry and Davis were discussed together.)

DR. EGBERT H. GRANDIN, New York, said the conclusions and arguments advanced by Dr. Reynolds are in accord with those which he presented in a thesis read before the society seventeen years ago entitled "A Plea for the Elective Cesarean Section." He contended then that this operation is ideal, and although seventeen years have elapsed since he has not seen fit to change his position. As to pubiotomy, he would advise it in preference to symphyseotomy, although he has not done the former operation. He has, however, performed

symphyseotomy twice, with living mothers and living children, and with no subsequent disability on the part of the women.

DR. LAPTHORN SMITH, Montreal, condemned pubiotomy. Last summer he performed two Cesarean sections, and can testify to the surprising ease with which the operation was done in both cases.

DR. JAMES CLIFTON EDGAR, New York, is uncertain as to where to draw the line between the antepartum cases and the early intrapartum cases. If the women are not allowed to stay in labor quite so long, instead of a mortality of 3 per cent., as reported by Dr. Reynolds, it will approach 1 per cent. in the antepartum cases. Where Cesarean section is undertaken in the latter part of pregnancy, there is difficulty in securing good drainage. Pubiotomy does not appeal to him, although he has never done it. He has, however, done six symphyseotomies.

DR. ROBERT A. MURRAY, New York, thinks that eventually in the vast majority of cases obstetricians will gradually come to the point where they will let women go to labor prepared to do a Cesarean section, and not interfere with high forceps or version, or any other method that will produce traumatism of the cervix and possibly cause infection which will defeat the result to be gained from a clean Cesarean section.

DR. ROBERT L. DICKINSON, Brooklyn, N. Y., said that the only case of Cesarean section he lost was a young woman who suffered from toxemia throughout her pregnancy. She was operated on at the beginning of labor, but died from a lack of resistance after an easy section. He thinks it is unobstetrical to insert a bougie into the uterus, as it may loosen the placenta and carry infection.

Ovarian Pregnancy.

DR. J. CLARENCE WEBSTER, Chicago, showed a specimen of ovarian pregnancy. The case is almost identical with the one he reported three years ago, although more interesting, in that the embryo is in position in the specimen. The thickness of the ovarian tissue averages about half an inch, except the placental area, where it is thicker. There are several hemorrhages in the ovarian tissue, especially in the position of the placenta.

Hermaphroditism (?) Uterus and Tubes Removed from a Male.

DR. WEBSTER also presented another specimen. The patient from whom the specimen was removed is a man, 33 years of age, who was admitted to the hospital with symptoms of acute peritonitis. He had had for many years an irreducible scrotal hernia, and it was supposed there was strangulation. An incision was made in the left inguinal region. No hernia was found, but a structure which looked like an adult uterus, tubes and ovaries. The uterus was removed, and what appeared to be a cervix. It was adherent around the inguinal ring. The abdomen was opened rapidly, the patient being practically moribund by that time. The incision was closed, and nothing more was done. Subsequently the patient died. The specimen at first seemed like the adult female genitalia, but careful dissection and microscopic study disclosed both uterus and tubes, and what appeared to be ovaries were testicles. They occupied exactly the same position as the ovaries in the female. The mucosa resembled that which is found in the adult female. Microscopic examination showed the glands were complex. The tubes had the characteristics of those of an adult female, except the fimbræ were not so complex. There were fewer fimbriæ, but the relationship to the testicles was exactly the same. On one side there was more marked ovarian or testicular fimbria. On examination of the broad ligaments he found on one side a cyst. Both round ligaments were present, but on the side on which the cysts existed the round ligament was flattened out and thin. On careful dissection of the broad ligaments there was a marked tube, about 4 millimeters in diameter, slightly convoluted, extending from the upper inner portion of the broad ligament toward the cervix. It was quite firm and had the consistence of a pipe-stem. He pointed out the Wolffian duct and the vas deferens, also the cervix and prostate. The patient was the father of twin children.

DISCUSSION.

DR. E. W. CUSHING, Boston, narrated the case of a man operated on for hernia. A uterus was found in the hernial sac.

DR. THOMAS S. CULLEN, Baltimore, said that some years ago in Baltimore there was found at autospy in a child a complete set of both female and male pelvic organs.

(To be continued.)

ST. LOUIS MEDICAL SOCIETY.

Regular Meeting, held March 16, 1907.

Summary of Federal Quarantine Work.

DR. S. B. GRUBBS, passed assistant surgeon, U. S. P. H. & M.-H. S., said that our federal quarantine service is conducted by the United States Public Health and Marine-Hospital Service under the law passed in 1893, at the time cholera was spreading in Europe, and the danger of its getting a foothold in this country was immiment. By this law the surgeon general is authorized to protect the public health by establishing quarantine stations at seaports where the state or local authorities have not provided them, and to require state quarantines to impose all the restrictions required at the government stations. It prescribes the present system of consular bills of health with the precautions taken in ports of departure by the consuls or United States medical officers stationed there, and the official discharge from quarantine now in use.

The precautions taken in 1893 were very efficacious, as a cholera epidemic was avoided and the number of cases occurring on vessels bound for the United States was much lessened by the efforts of the medical officers stationed abroad. This was strikingly shown at Naples, where vessels sailing under United States regulations had no cholera aboard, while vessels sailing at the same time for South America had many cases.

Cholera and plague are constant menaces, requiring increasing vigilance, especially on our western coast and our island possessions in the Pacific, but yellow fever still remains the great quarantine problem, although the acceptance of the doctrine of mosquito transmission has enormously simplified the work.

All the South Atlantic and gulf ports have quarantine stations, the majority now belonging to the federal government. These are in isolated positions, and a policy of strict non-intercourse is maintained during the summer. The stations are all equipped with complete disinfecting plants, including steam chambers, sulphur furnace, formaldehyd generators, etc.; for until four years ago a sterilization of the vessel and contents was attempted. Now fumigation by burning sulphur in all inclosed parts of the vessel to kill mosquitoes is sufficient if yellow fever is the only disease feared. The exact details of inspection, disinfection and general procedure will differ slightly at different stations. The regular work as practiced at gulf quarantine station from 1902 to 1905 is described.

Quarantine measures against yellow fever are instituted on land only after the disease has gained a foothold, and then the federal government confines its efforts to preventing the spread from one state to the other, unless requested by the state authorities to take more active measures.

The fundamental facts of mosquito transmission are:

1. Yellow fever is transmitted only by the *Stegomyia fasciata*.
2. A yellow fever patient can infect the mosquito only in the first three days of his sickness.
3. The mosquito must have been infected at least twelve days before he can transmit the infection.

The indications to suppress an epidemic, therefore, are:

1. To locate all cases of the disease as early as possible, and protect them from the stegomyia.
3. To destroy infected stegomyia.
3. To prevent stegomyia from breeding.

To these may be added as an important corollary: Instruct the public in mosquito transmission, to gain their confidence and cooperation.

The general plan of the campaign comprises a central headquarters for the medical officer in command and his staff, from which all general orders are issued and to which reports are made; a well-screened central hospital to which as many

cases as possible are sent; a medical officer in charge of each city ward. As soon as possible a sanitary survey is gotten up in each ward, the exact condition of each house being recorded in convenient form, and inspection maintained, especially to find all cases of fever as early as possible.

To destroy the stegomyia, squads fumigate systematically with sulphur, pyrethrum powder or camphor phenol. Where there is a case one room is first fumigated and screened carefully, the patient is moved into it, and then the rest of the house, and as many as possible of the surrounding houses fumigated, to kill any mosquitoes that may have bitten this case before it was put under a bar.

To prevent the mosquitoes from breeding, advantage of the fact is taken that stegomyia breed only about houses. The screening, oiling and salting squads find all stagnant water about each house, and either empty, screen, oil or salt it, according to its use, so that in every case no mosquitoes can deposit eggs.

Outside of the infected places, but in infectible territory, measures must be taken not only to prevent the disease from coming in, but also to satisfy the people and so allay panic. The most approved plan is to establish a sanitary station a few miles out on every railroad, river or other line of communication leading from the infected point, and to run "shuttle trains" to the stations, where regular trains are made up, with fresh crews in charge. Passengers that may possibly have been exposed to infection must remain in detention camps a time sufficient to cover the incubation period of the disease, or be sent through in screened coaches to non-infectible territory willing to receive them. Besides, all trains in infectible territory must be carefully inspected to the end, that by a complicated system of certificates, the fact that each passenger has not been exposed to infection for five days can be assured, be he from north or south. This train inspection work can be much simplified, and to a large extent abolished, as soon as the people are better educated in the matter, and recognize that the stegomyia is not a traveler either by wing or on cars, and that a mosquito bar renders a case of yellow fever absolutely harmless. Non-infectible localities should not bar out refugees, as yellow fever can not spread without the presence of the *Stegomyia fasciata*.

Medical Inspection of Public Schools.

DR. GEORGE TUTTLE said that the prophylaxis of disease is the great modern advance in the science of medicine. Medical inspection of schools began in Boston in 1894. Chicago and New York soon followed. In St. Louis an unofficial inspection was made for about three months in 1898 by the Medical Society of the City Hospital Alumni, the object being to try to have the city authorities introduce it. During this period 1,601 cases were found; 76 of the infectious diseases, 787 of lesions of the oral or respiratory tract, 37 of the ear, 387 of the eye, 45 of the skin, and 274 of a miscellaneous nature, such as headaches, gastric or intestinal troubles, anemia, adenitis and the like.

Medical inspection should look not only for the so-called infectious diseases, but for defective eyesight, for diseases involving the nasal, pharyngeal, oral and auditory tracts, as common colds, enlarged tonsils, adenoids, bronchitis or even tuberculosis. Various skin lesions should be watched for, as ringworm, lice, itch, contagious impetigo and other rashes. Occasionally cardiac cases will be found. Lately the question of defective teeth has been taken up. Deformities of the bones and joint diseases, with spinal curvatures from faulty positions at the desks should be investigated. Malnutrition and anemia bring up the question of insufficient feeding at home, and the advisability of the city furnishing hot lunches. Chorea, neuralgias and headaches will often be found due to too close application at school. Separate schools for the defective child seem one of the growing needs of our modern civilization, and have been successfully introduced in New York.

The inspectors should have charge of the ventilation, heating, lighting and sanitation of the buildings, as well as the oversight of the health of the scholars and teachers. They should also be responsible for the efficient vaccination of their wards.

Therapeutics

Whooping Cough.

Yeo, in *Merck's Archives*, recommends the following treatment in whooping cough:

℞.	Pulveris belladonnæ rad.....gr. iss		09
	Quininæ sulphatis.....gr. viii		52
	Sachari .....ʒss	2	

M. Ft. chartulæ No. x. Sig.: One powder three times a day.

The same author recommends the following spray for children over 6 years of age:

℞.	Cocainæ hydrochloridi.....gr. x		65
	Potassii chloratis.....gr. iii		19
	Aquæ q. s. ad.....ʒi	30	

M. Sig.: To be sprayed into the throat twice a day.

[The physician should apply this spray personally and should not write a prescription.—ED.]

He also recommends the following combination for use as an insufflation, introducing it into the larynx by means of a glass tube curved at one end:

℞.	Pulveris belladonnæ		
	Bismuthi salicylatis, āā.....gr. lxxv	4	85
	Quininæ sulphatis.....gr. xv	1	

Sig.: A few grains to be used as an insufflation into the larynx daily.

Potter, in his "Text-Book of Materia Medica, Pharmacology and Therapeutics," recommends the following for infants in the convulsive stage:

℞.	Chlorali hydrati .....ʒi	4	
	Potassii bromidi .....ʒii	8	
	Syrupi pruni virginianæ		
	Aquæ, āā, q. s. ad.....ʒi	30	

M. Sig.: One teaspoonful thrice daily.

For older children, Bedford, quoted by Potter, recommends:

℞.	Bromoformi .....m. xvi	1	
	Glycerini .....ʒiss	45	
	Tincturæ cardamomi comp.		
	Alcohol, āā .....ʒii	8	

M. Sig.: A teaspoonful at commencement of the paroxysm.

Migraine.

The treatment of migraine depends on the underlying cause of the malady. All excesses in diet and sexual indulgence must be avoided. Neurasthenic patients must be ordered to take a rest or a vacation. If the kidneys fail to excrete a sufficient quantity of urinary solids daily, potassium acetate or citrate should be given in doses of from 5 to 10 grains (0.32-0.65) three times a day. The patient should be ordered to drink water copiously. When the liver shows symptoms of inactivity Hare, in "Practice of Medicine," states that its function should be stimulated by administration of calomel, blue mass or podophyllin. Such patients, he states, do well if given massa hydrargyri (blue mass) in doses of from 5 to 10 grains (0.32-0.65) every week, followed by a saline purge.

In gouty patients, Yeo, in "Clinical Therapeutics," advises avoidance of dietetic excesses, including malt liquors and wines. He states that regular exercise in the open air is advisable. This authority states that as a preventive of attacks in gouty patients a pill of aloes and hyoscyamus with massa hydrargyri at bedtime, and a dose of Carlsbad salts in a tumblerful of hot water the next morning.

℞.	Extracti aloes		
	Extracti hyoscyami, āā.....gr. i		06
	Massæ hydrargyri.....gr. ii		12

M. ft pilula No. i. Sig.: One such pill at bedtime.

The dose of each ingredient, of course, must be suited to the individual patient.

Hare states that if the patient is gouty, and in addition suffers from the condition commonly designated "uricacidemia," the salicylates are of particular value. He recommends salicylate of strontium in doses of from 5 to 10 grains (0.32 to 0.65) three times a day. In the migraine of rheumatic persons salicylic acid is of great service, often entirely curing the disease. As this remedy is irritant to the stomach, if in pills or capsules it must be taken with plenty of water or milk, and

should follow rather than precede meals. It may be given in a solution of glycerin and water, or its taste may be disguised by the use of syrup of orange or syrup of ginger. The following formula may be used:

℞.	Acidi salicylici	℥ii	8
	Tincturæ lavandulæ comp		
	Glycerini, āā	f℥ss	15
	Aquæ dest. q. s. ad	f℥viii	240

M. Sig.: A tablespoonful every two hours. Or:

℞.	Acidi salicylici	℥ii	8
	Glycerini	f℥ss	15
	Syrupi aurantii	f℥iv	120
	Aquæ dest q. s. ad	f℥viii	240

M. Sig.: A tablespoonful every two hours.

Syrupus zingiberi may be substituted for the syrupus aurantii in the above prescriptions.

In some cases the use of salol in doses of from 5 to 10 grains (0.32 to 0.65) a day as an intestinal antiseptic is of advantage.

Migraine is frequently caused by errors of refraction, and in these cases carefully fitted glasses should be provided. If the nasal mucous membrane is hypertrophied, or if other abnormalities exist in the nose, they should be treated.

For the relief of the attack a brisk saline cathartic should be given with the idea of ridding the system of poisonous material. This may be followed in from half an hour to an hour by administration of 2 grains (0.13) of caffein with 10 grains (0.65) of sodium bromid. In some cases a small dose of acetphenetidin (phenacetin) or acetanilid should be added. Hare states that in some cases a dose of 10, 15 or 20 drops (0.6, 0.92, 1.25) of the tincture of gelsemium with 1 grain of an active extract of cannabis indica gives the greatest relief. There is some difficulty, however, in obtaining an active preparation of this drug, the variations in strength being notorious. It has been shown recently that the extract is inert.

Application along the course of the affected nerve of cologne water containing from 5 to 10 grains (0.32 to 0.65) to the ounce (30 c.c.) may give much relief; but the patient should lie down in a darkened room to obtain the greatest effect from these remedies.

Mineral Acids.

Herman B. Sheffield, in the *New York Med. Jour.*, declares that insufficient attention is being paid to the medical properties of mineral acids in the treatment of diseases of children. These acids advantageously replace bitter tonics and act specifically on the alimentary canal and osseous system. Children like the taste of these acids if they are well diluted in sweetened water or in combination with raspberry or orange syrup and water.

Medicolegal

Law for Cases of Alleged Malpractice—Expert Testimony—Results.

The Supreme Court of Minnesota reverses, in the case of Staloch, administrator, vs. Holm and another, physicians and surgeons, a judgment obtained by the plaintiff for $1,000 damages for alleged malpractice.

The court says that the question presented here was whether the evidence justified the verdict by showing negligence of the defendants (1) in performing the operation at all, and (2) in the manner of its performance. The testimony must be construed as favorably to the plaintiff as reasonably might be.

The patient, an apparently strong, healthy man, 21 years of age, working with a steam threshing outfit, stepped on the covering over the cylinder of a separator about to stop. A board slipped. His right foot went down in front of the revolving cylinder. It seems that considerable flesh was mangled, crushed and shredded; that the wound was large, lacerated, ragged and oozing; that it was "ground full of chaff, dirt and seeds;" and that bones and tissues were "gouged out." The young man was taken to a nearby house and Dr. Schmitt, one of the defendants, immediately sent for. The physician arrived; was at once able to tell that an operation would be necessary, but did not decide on it then. It was at least an hour, he said, before he commenced to actually operate. This he did, according to his testimony, a little before 1 o'clock and completed it before 2, remaining for some hours afterward and administering stimulants. Shortly after he left the patient died. The evidence of the plaintiff tended to show that the patient died of shock; the evidence of the defendants, that he died from the effect of a bubble of air or fat, or of a clot of blood which found its way to and stopped the action of the heart. No postmortem examination was made.

SURGEON BOUND ONLY BY FACTS KNOWABLE AT THE TIME OF OPERATION.

The court says that it was not significant whether, as the plaintiff's case tended to show and the defendants' case to deny, the operator subsequently made damaging admissions concerning the propriety of the operation, in view of his after-acquired knowledge. His negligence was to be determined by reference to pertinent facts then in existence, of which he knew or should have known in the exercise of due care, when the operation was performed. It would be a work of supererogation to cite authorities for so obvious and necessary a principle, or for this specific application of a general rule. There is an apt and neglected analogy in the rule restricting proof of the presence or absence of probable cause for instituting an original judicial proceeding complained of in an action for malicious prosecution to known or knowable facts in existence at the time of the commencement of that original proceeding.

Shortly before the trial a priest of the local Catholic parish and a physician, who had been employed to get evidence for the plaintiff, and who was a competitor of the defendants, exhumed the body of the deceased, with which the amputated part of the leg had been buried. But while the presence of the parish priest rebutted any inference of bad faith in the disinterment, it might well be questioned whether the production of only part of the bones in controversy, and of only parts of those parts because of their mutilation during the exhumation, justified the admission in evidence of the parts offered.

BEST JUDGMENT ORDINARILY NO DEFENSE FOR NEGLIGENCE.

The principles of law applicable to such a state of facts are clear and well settled. In an ordinary action for negligence, that a man has acted according to his best judgment is no defense. The standard of careful conduct is not the opinion of the individual, but is the conduct of an ordinarily prudent man under the circumstances. In the leading (English) case of Vaughn vs. Menlove, 3 Bing (N. S.) 468, 474, Tindall, C. J., said that to hold otherwise "would leave so vague a line as to afford no rule at all; the degree of judgment belonging to each individual being infinitely various." With respect to matters resting on pure theory, judgment, and opinion, however, there is a generally recognized variation from this sound general principle.

MALPRACTICE MAY BE AN EXCEPTION.

Cases of malpractice may be within the exception. A physician entitled to practice his profession, possessing the requisite qualifications, and applying his skill and judgment with due care, is not ordinarily liable for damages consequent on an honest mistake or an error of judgment in making a diagnosis, in prescribing treatment, or in determining on an operation, where there is reasonable doubt as to the nature of the physical conditions involved or as to what should have been done, in accordance with recognized authority and good current practice. The many authorities to this effect will be found collected in great number in 22 Am. & Eng. Enc. of Law (2d Ed.) 804, note 5, in note to Whitesell vs. Hill, 37 L. R. A. at page 834, and in note to Gillette vs. Tucker, 93 Am. St. Rep., at page 659. Later cases than are there cited are in accord. The court then quotes from McKenzie vs. Carman, 92 N. Y. Supp. 1063, reported in the Medicolegal Department of THE JOURNAL of June 3, 1905, page 1807, and cites Wood vs. Wyeth, 94 N. Y. Supp. 360, reported in the Medicolegal Department of THE JOURNAL of Aug. 26, 1905, page 654.

The exception does not, however, the court goes on to say, apply to all that a physician or surgeon may do in the practice of his profession. There is often a fundamental difference

in malpractice cases between mere errors of judgment and negligence in previously collecting data essential to a proper conclusion or in consequent conduct in the subsequent selection and use of instrumentalities with which the medical man may execute his judgment. In some matters, medicine is a science; in others, an art. Generally the exception governs cases in which it is a science; the rule, cases in which it is an art.

If, for example, a physician certifies that a man is insane without having made an examination, his negligence is of fact and not at all of science. But "a medical man is not bound to form a right judgement (as to sanity) so as to be liable to an action if he does not." Crompton, J., in Hall vs. Semple, 3 F. & F. 337; Williams vs. Le Bar, 141 Pa. 149. When the physician is actually operating he is employing surgery as an art, and if, for example, he use an old rusty saw (Young vs. Fullerton, reported in McClelland on Civil Malpractice, 253), or if he operate on the wrong arm (Sullivan vs. McGraw, 118 Mich. 39), or sew up a sponge in an abdomen he has opened (Gillett vs. Tucker, 67 Ohio St. 106), his wrong concerns physical facts, and has fairly been held to be governed by ordinary principles of negligence.

Where, however, due diligence and skill have been employed in ascertaining the essential preliminary information for an opinion whether a surgical operation should be performed or not, the formation of the judgment in accordance with appropriate scientific knowledge, in a case of reasonable doubt, is within the exception. It may be that Bennison vs. Walbank, 38 Minn. 313, is inconsistent with the conclusion here reached. No question as to this exception to the rule, however, was adverted to in that decision.

One reasonable justification for this exception in many cases is the elementary principle that when a man acts according to his best judgment in an emergency but fails to act judiciously, he is not chargeable with negligence. The act or omission, if faulty, may be called a mistake, but not carelessness. See Brown vs. French, 104 Pa. 604. Physicians, in the nature of things, are sought for and must act in emergencies, and if a surgeon waits too long before undertaking a necessary amputation, he must be held to have known the probable consequences of such delay, and may be held liable for the resulting damage. Du Bois vs. Decker, 130 N. Y. 325, Martin vs. Courtney, 75 Minn. 255.

PECULIAR JUDGMENT REQUIRED OF SURGEON.

Another justification for the exception lies in the nature of the undertaking. Most professional men are retained or employed in order that they may give the benefit of their peculiar and individual judgment and skill. A lawyer, for example, does not contract to win a lawsuit, but to give his best opinion and ability. He has never been held to liability in damages for a failure to determine disputed questions of law in accordance with their final decision by courts of appeal. It would be just as unreasonable to hold a physician responsible for an honest error of judgment on so uncertain problems as are presented in surgery and medicine. Indeed, the peculiarities of the subject matter with which medical men deal constitute another abundant justification for the exception. Those peculiarities concern, in the first place, the constitution of the human mind and body, and, in the second place, the nature of his science itself.

On the human subject-matter with which physicians have to do the remarks of Woodward, J., in McCandless vs. McWha, 25 Pa. 951, have become classical. Smothers vs. Hanks, 34 Iowa, 286. Judge Upton has, however, improved them: "The surgeon does not deal with inanimate or insensate matter like the stone mason or bricklayer, who can choose his materials and adjust them according to mathematical lines, but he has a suffering human being to treat, a nervous system to tranquilize, and an excited will to regulate and control. Where a surgeon undertakes to treat a fractured limb, he has not only to apply the known facts and theoretical knowledge of his science, but he may have to contend with very many powerful and hidden influences, such as want of vital force, habit of life, hereditary disease, the state of the climate. These or the mental state of his patient may often render the management of a surgical case difficult, doubtful and dangerous, and may have greater influence in the result than all the surgeon may be able to accomplish, even with the best skill and care." Williams vs. Poppleton, 3 Ore. 139, 147.

Physicians and surgeons deal with progressive inductive science. On two historic occasions the greatest surgeons in our country met in conference to decide whether or not they should operate on the person of a President of the United States. Their conclusion was the final human judgment. They were not responsible in law, either human or divine, for the ultimate decree of Nature. The same tragedy is enacted in a less conspicuous way every day in every part of the country. The same principles of justice apply. Shall it be held that in such cases, where there is a fundamental difference among physicians as to what conclusion their science applied to knowable facts would lead to, then what they with their knowledge, training and experience are unable to decide, and what, in the nature of human limitations, is not susceptible of certain determination, shall be autocratically adjudged by twelve men in a box, or by one on the bench, or by a larger number in an appellate court, none of whom are likely to have the fitness or capacity to deal with more than the elements of the controversy? All the court can properly do if an action for negligence should be brought in such a case would be to direct a verdict for the physician.

UNCERTAINTY OF TESTIMONY, ESPECIALLY OF EXPERTS.

A final and practical reason for the exception to the ordinary rule in negligence cases is the inherent and inevitable uncertainty of available testimony. The basis of the proof of negligence and of the hypothetical questions to the plaintiff's experts is naturally the narrative of the family or friends of the patient. Their testimony must ordinarily be unsatisfactory because of the presence of natural bias, the absence of technical knowledge essential to proper observation, and often the want of opportunity for actual perception, as will presently appear in this case.

This is not necessarily, however, the greatest of the surgeon's tribulations. He is confronted by other uncertainties in testimony greater than those of the human constitution, however fearfully and wonderfully we may be made or act, and greater than those of physical science, however elusive it may be. He is faced by the eccentricities of medical experts. The court has no inclination to share in the prevalent and intemperate denunciation of their unreliability and venality. But if every verdict muleting a reputable physician in damages must be sustained if any of his professional brethren can be induced to swear that, assuming the testimony of the family and friends of the patient to be true, the physician had made a mistake of judgment or had been guilty of unscientific practice, then the profession would be one which "unmerciful disaster follows fast and follows faster."

The imminent possibilities of injustice to individuals, and the difficulties of maintaining a uniformity of decisions in malpractice cases, led Judge Manly, in a case which has not attracted the attention it deserves (Woodward vs. Hancock, 52 N. C. 384), to say: "What amounts to reasonable skill and care belongs to a class of questions which are said to be compounded of law and of fact. In this class stands reasonable time, due diligence, legal provocation, probable cause, and the like. A division of the question in such cases between the court and jury is now considered and settled; and, therefore, where there is a state of facts conceded or proved, it becomes the duty of the court to draw the conclusion as a matter of law. If there be a conflict of testimony presenting different views of the case it is in like manner the court's duty on these views to draw proper conclusions."

However this may be, the court is of opinion that in this case in accordance with the rule that it is not for the court, but for the jury, to infer or not to infer negligence from the facts as well as to determine what the facts are, the defendants were entitled to have had a verdict directed in their favor on the record as presented to this court on this appeal.

SURGEON IN ATTENDANCE ONLY JUDGE OF PROPRIETY OF DOUBTFUL OPERATION.

But that the defendants should have prevailed on the merits, if the case had been governed by ordinary principles of negli-

gence, was not the only consideration here. The determining point in the expert testimony was its certain result in these two propositions, namely: 1, Standard medical authorities and approved current practice recognize that there is a class of cases which justify a primary operation during a period of shock; 2, whether the present was or was not within that class depended on the judgment of the surgeon who had examined all the conditions of the patient which were involved. A brief summary of those conditions will serve to demonstrate how absolutely the question presented was one of judgment only. It requires no technical knowledge to perceive from the record in this case that the attending physician was compelled to take some immediate action; and that in determining whether he should operate or not he was called on to exercise his judgment with reference to many complications. A just conclusion would have had reference, among other things, to circumstances like the character of the fracture; the extent and condition of the wound; the exposure of marrow and nerve ends; the destruction of means of nourishment of the bone; the apparent present and probable future vitality of the extremity, the presence and cause of hemorrhage; the danger of blood poisoning at the time of his arrival, and of future infection, with reference to the length of previous exposure; the character and quantity of foreign matter in the wound, and the extent to which it had been "ground into the tissues;" the degree and specific causes of existing shock; the apparent ability of the patient to resist shock, determined, inter alia (among other things), by observation of his skin, color, respiration, pulse, temperature and reaction on stimulants administered; the probable degree of shock which would have been produced by causes then existing if no operation had been performed or by adequate cleansing of the wound, or by an operation. This enumeration serves also to emphasize the propriety of holding that the liability of a physician for negligence in determining to operate in view of these considerations is governed by the exception to the general rules of negligence, and not by those rules which deny the validity of the defense that the individual exercised his best judgment, and to emphasize also grave doubt whether a jury is a competent tribunal to determine so complicated and technical an inquiry, and whether biased lay observation of a patient's condition should be regarded as an adequate basis for expert testimony.

The record, then showed that the immediate amputation might, under conditions of the general character of those here present, have been in accord with proper scientific practice; that the operating physician made an uncriticised investigation into the conditions of his patient affecting the propriety of the operation; that the existence of the necessary conditions for a justified operation rested on opinion; that the defendant in the exercise of his best judgment concluded they existed; and that thereon, in the exercise of due care, he undertook to operate. Therefore, he can not be held responsible in damages even if his judgment was erroneous. That, however, the court is not prepared to say was shown by sufficient evidence to take the case on that point to the jury.

AMPUTATING TIBIA A SECOND TIME NOT NEGLIGENCE.

The second claim of negligence rested on the demonstrated fact that the defendant made two amputations of the tibia. He had testified, before the bones showing this fact were produced, that he had operated once on the tibia and twice on the fibula because on the latter he had found a "greenstick fracture" above his first cut. This evident confusion was not significant in itself nor in view of an examination of the bones produced. The effect of the expert testimony, including that of one of the plaintiff's own witnesses, was that in the effort of the surgeon to leave as much of the leg as possible, and at the same time to get as good a flap as possible, it may be consistent with good surgery after one cutting has been made "to saw off a little more." The expert testimony did not show that the second cutting was a proximate cause of the result; but rather that "the mere fact of sawing an extra section of bone, which is done in a half a minute, does not materially affect the shock," and that "even the amputation of the limb where the patient is under the influence of an anesthetic increases the shock but very little." The only negligence of which this administrator could complain was negligence which caused death.

FATAL RESULT NO EVIDENCE OF NEGLIGENCE.

The fact that the patient died immediately after the operation was in the view here taken not significant. In Haire vs. Reese, 7 Phila. (Pa.) 292, Judge Thayer said: "No presumption of the absence of proper skill and attention arises from the mere fact that the patient does not recover. . . . God forbid that the law should apply a rule so rigorous and unjust as that to the relations and responsibilities arising out of this noble and humane profession." In Ewing vs. Goode (C. C.) 78 Fed. 442, Judge (now Secretary) Taft said: "A physician is not a warrantor of cures. If the maxim res ipsa loquitur (the matter speaks for itself) were applicable, . . . and a failure to cure were held to be evidence, however slight, of negligence on the part of the physician or surgeon causing the bad result, few would be courageous enough to practice the healing art; for they would have to assume financial liability for nearly all the 'ills that flesh is heir to.'" If apart from the fact of death there is no liability—and that is the conclusion in this case—that fact does not create it.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

May 11.

1 Disturbance of Vision Due to Exaggeration of Binocular Association. P. Janet, Paris.
2 *Appendicitis in Infants and Children. J. F. Erdmann, New York.
3 *Pityriasis Rosea. F. Wise, New York.
4 *Insufficiency of the Gastric Muscle. M. Gross, New York.
5 *Vulvovaginitis in Children, with Special Reference to the Gonorrheal Variety and Its Complications. H. B. Sheffield, New York.
6 *Is an Herpetic Origin of Pleurisy Possible? W. H. Birchmore, Brooklyn.
7 Uterus of the Opossum. J. P. Furniss, Selma, Ala.
8 *Treatment of Stuttering. S. W. Scripture, New York.

2. **Appendicitis in Infants and Children.**—Erdmann says that the diagnosis of appendicitis is more difficult in children than in adults, on account of the absence of a good history, and the complication with gastrointestinal complaints. He discards the idea that the eating of meats is one cause of appendicitis because he finds appendicitis occurring in milk eating infants. The rapidity of intoxication of the child due to the spreading of the peritoneal invasion, and the marked lessening of resistance in the infant are evident. The appendix has not descended to its normal position until the third or fourth year, and is often found under the costal arch, so that the point of pain and tumor is much higher than in the adult, being located in the loin. There are many gastrointestinal symptoms, the child vomits and the temperature is elevated, while he wards off the examining hand by protecting the abdomen. Rectal palpation and blood examination give little aid in diagnosis. Concretions have been found by the author in the appendix. Pinworms have also been found in ten cases. Floating kidney has been present in several. Erdmann is a firm believer in early operation, with a small incision. The bowels should move the day after operation. The patient is allowed to roll, and sits up in bed by the third or fourth day.

3. **Pityriasis Rosea.**—Wise reports several cases that were mistaken for cutaneous syphilis and gives the points of differential diagnosis between the two diseases.

4. **Insufficiency of Gastric Muscle.**—Gross says that insufficiency or atony of the stomach is a relatively frequent affection. The prognosis is favorable when the condition is recognized early. The *vis medicatrix naturæ*, aided by irrigations, or douches, and hydropathic measures, is the best method of treatment.

5. **Vulvovaginitis in Children.**—Sheffield classes vulvovaginitis in children as catarrhal, due to a lack of cleanliness or chemical irritation; traumatic, due to masturbation, mechani-

cal injury or indecent violence; and parasitic, due to oxyurides, saphrophytes or pathogenic bacteria, generally gonococci.

6. **Herpetic Origin of Pleurisy.**—Birchmore reports a case, in which there had been repeated attacks of herpes in different locations, synchronous with pains of the chest in which no physical examination had been made. An attack occurred, in which the pleurisy signs were localized over a limited area, but no effusion occurred. Over the area of pain there appeared a series of herpetic vesicles. The author brings up the question of whether or not rheumatism and pleurisy may be caused in some instances by a condition of the system that also produces ordinary herpes, the external lesion alternating with the lung or joint condition.

8. **Treatment of Stuttering.**—Scripture describes a psychologic and phonetic method for curing stuttering. Control must be restored to each set of vocal organs. Breathing exercises first teach control of the diaphragm and thoracic muscles. Control of the larynx is then taught and of the tongue and lips in articulation. The patient is next taught the letters phonetically, and educated to produce any one of them at will. Finally reading becomes automatic. For conversation the patient must first learn to seize hold of the thought he wishes to express and not to lose it on account of his embarrassment. He describes objects slowly and finally reaches perfect conversation.

Boston Medical and Surgical Journal.

May 9.

9 *Gastroenteric Obstruction in Early Infancy. T. M. Rotch and F. T. Murphy, Boston.
10 The Tuberculosis Problem of the Middlesex North District, Massachusetts. T. F. Harrington and C. E. Simpson, Lowell, Mass.
11 *Treatment of Prostatic Hypertrophy. (To be continued.) J. H. Cunningham, Jr., Boston.
12 Hospitals for Children. R. W. Hastings, Boston.
13 Diagnosis of Dilatation of the Duodenum. H. A. Christian, Boston.
14 *Abdominal Tumor Weighing Eighty-three Pounds. F. W. Johnson, Boston.

9. **Gastroenteric Obstruction in Infants.**—Rotch and Murphy discuss the general diagnosis and treatment and report two cases of pyloric stenosis and one of volvulus that were treated successfully by laparotomy.

11. **Treatment of Prostatic Hypertrophy.**—Cunningham discusses the various methods of treatment employed based on the mortality, and reports 24 cases of median perineal prostatectomy.

14. **Large Abdominal Tumor.**—In the case reported by Johnson, occurring in a woman 59 years of age, weighing about 160 pounds, there was a fibroid of the uterus weighing 14½ pounds, and an ovarian cystoma weighing 68½ pounds. The sac of the cystoma weighed 28½ pounds, the fluid 40 pounds.

New York Medical Journal.

May 11.

15 Chronic Muscular Diseases of the Heart and Their Treatment. T. Schott, Bad Nauheim, Germany.
16 Treatment of Bone Deformity of the Thorax and Spine in Scoliosis by Plaster Jackets. M. Hoke and C. R. Andrews, Atlanta, Ga.
17 *Artificial Supports for the Viscera. J. M. Taylor, Philadelphia.
18 Appendicitis in Pregnancy. H. N. Vineberg, New York.
19 Two Cases of Traumatic Cataract, with Operation. D. Webster, New York.
20 Relation Between Disease of the Tonsil and Enlargement of the Glands of the Neck. J. T. Campbell, Chicago.
21 *Use of Baths in Treatment of Leprosy. H. T. Hollmann, Kalaupapa, Hawaii.
22 Unrecognized Diphtheria in Children. I. Friesner, New York.
23 Danger of Fire in Formaldehyd Disinfection. C. H. LaWall, Philadelphia.

17. **Supports of Viscera.**—Taylor describes abdominal and pelvic belts devised by Dr. Morris Longstreth, which have yielded good results in the treatment of visceral ptoses.

21. **Baths in Leprosy.**—Hollmann has found baths, especially medicated baths, useful in the treatment of leprosy, particularly in the case of persons suffering from ulcerated tubercles and thickened lifeless skin, or in whom there is neuritis, lymphadenitis or the lepra itch. The medicated baths used are the alkaline bath, sodium bicarbonate or borax, one pound to the bath; astringent baths, alum one-half pound to the bath; potassium sulphate baths, one-half pound to the bath. The bath which has proven most beneficial is a warm or hot medicated bath, made by adding to a bath of water (30 to 40 gallons) an infusion of eucalyptus leaves (4 gallons).

The bath should be given twice daily; the water in the morning should be at a temperature of from 95 to 104 F. Enough water should be used to immerse the body (30 to 40 gallons). The patient should remain in the bath at least fifteen minutes. During the immersion active friction should be kept up on all parts of the body. Immediately after bathing the patient should be thoroughly rubbed with a towel, coarse enough to cause exercise to the skin. This should be followed with an ointment composed of:

℞. Olei eucalypti		
Ung. sulphuris, āā	℥iv	15
Lanolini	℥ii	60

M. Ft. ungt.

This ointment should be thoroughly rubbed into the skin, while all excess should be removed.

The evening bath should be at a temperature of 105 F., and should be gradually raised as high as can be safely borne, about 110 F. After this hot bath the patient should be wrapped in a warm blanket and allowed to remain thus covered for ten minutes. This causes the sweat glands to act freely, thus removing waste material from an already diseased body. The rubbing with a coarse towel and the use of the ointment should then follow. This hot eucalyptus bath assures the patient a good night's sleep, a thing most highly valued by a leper suffering from neuritic pains.

Lancet-Clinic, Cincinnati.

May 11.

24 Résumé of the Field of Roentgenology. H. P. Wells, St. Louis.
25 Case of Aneurism of the Thoracic Aorta. M. A. Brown, Cincinnati.
26 Successful Obliteration of Hemangioma Cavernosum of Upper Lip and Inner Side of Left Cheek. F. Reder, St. Louis.

Medical Fortnightly, St. Louis.

May 10.

27 Treatment of Some Forms of Cerebral Disorders. G. B. Hassin, Chicago.
28 Utility of Distended and Dried Specimens of Visceral Anatomy. B. Robinson, Chicago.

St. Louis Medical Review.

May 4.

29 Synopsis of the Work in Various Departments in the City Dispensary During 1906. H. J. Scherck, St. Louis.
30 *Résumé of Federal Quarantine Work. S. B. Grubbs, St. Louis.
31 Medical Inspection of Public Schools. G. M. Tuttle, St. Louis.
32 Inspection of School Children, with Special Reference to Ear, Nose and Throat. C. Wyche, St. Louis.

30.—See abstract in THE JOURNAL, May 25, 1907, page 1810

Surgery, Gynecology and Obstetrics, Chicago.

April.

33 *Neurologic Surgery. J. B. Murphy, Chicago.
34 Pyosalpinx and Other Chronic Pelvic Infections Treated by Laparotomy. F. H. Martin, Chicago.
35 Non-operative Treatment of Pelvic Infections. T. J. Watkins, Chicago.
36 Vaginal Drainage for Pelvic Pus. H. T. Byford, Chicago.
37 *Rupture of Urinary Bladder. F. A. Besley, Chicago.
38 *The Cobbler Stitch in Visceral Anastomosis. G. Crile, Cleveland.
39 Small Portable Microscope for Bedside Blood Counting. H. C. Hollister, Chicago.
40 *Management of the Adipose Layer in Suturing. R. T. Morris, New York.

33.—This paper was published in abstract in THE JOURNAL, March 2, 1907, page 765.

37. **Rupture of Urinary Bladder.**—Besley presents a report and an analysis of twenty-three cases of rupture of the urinary bladder collected from the records of the Cook County Hospital.

38. **Cobbler Stitch in Visceral Anastomosis.**—Crile says that the cobbler stitch is applicable to any form of anastomosis, even in cases of edematous bowel. Since using this method he has not had a fatality in fifty-one anastomoses of various viscera for chronic diseases.

40. **Management of Adipose Layer in Suturing.**—Morris describes the method which he has employed for many years in his abdominal work as follows: 1. A continuous suture of very small catgut for the peritoneum, in order to cause the least degree of irritation which would lead to plastic exudation and subsequent peritoneal adhesions. 2. A continuous

suture of small or large catgut for the posterior and anterior sheaths of the abdominal muscles, allowing atmospheric pressure to close out dead spaces evenly in the muscle tissue. 3. A continuous catgut suture through the skin only, carefully avoiding the adipose layer. If the adipose faces of the wound are pressed snugly together before the last knot is tied they will adhere so firmly and evenly that it will be difficult to separate them twenty-four hours later, if for any reason it becomes necessary to reopen the abdominal incision.

Buffalo Medical Journal.

April.

41 *Intestinal Resection and Anastomosis. W. L. Wallace, Syracuse, N. Y.
42 *Leucocytosis in Surgical Infections. C. O. Boswell, Rochester, N. Y.
43 Version or High Forceps, Which and When? W. M. Brown, Rochester, N. Y.

41. **Intestinal Resection.**—Wallace describes a method of lateral intestinal anastomosis in which an artificial appliance is used, which he has found exceedingly safe and rapid of execution.

42. **Leucocytosis in Surgical Infection.**—Boswell's findings with reference to the clinical value of leucocytosis in surgical infection correspond with those of other investigators.

Louisville Monthly Journal of Medicine and Surgery.

April.

44 Sympathetic Ophthalmia. T. C. Evans, Louisville.
45 *Remedies. B. C. Frazier, Louisville.
46 *Malignant Tumors of the Kidney in Children. A. M. Cartledge and C. Thompson, Louisville.
47 Mechanical and Chemical Effect of Milk on the Human. A. E. Gue, Detroit.

45. **Remedies.**—Frazier claims that doctors are largely to blame for the great amount of drugs on the market, and urges that a halt should be made in the general prescribing of proprietary remedies.

46. **Tumor of Kidney.**—Cartledge and Thompson report a case of adenosarcoma of the kidney occurring in a boy about twelve months old.

West Virginia Medical Journal, Wheeling.

April.

48 *The Uterine Curette. C. Ogden, Clarksburg.
49 Chronic Uterine Hemorrhages, Their Causes and Clinical Significance. G. Ackermann, Wheeling.
50 *New Methods of Skin Grafting. J. E. Cannaday, Hansford.
51 Stokes-Adams Disease and Experimental Heart Block. J. T. Thornton, Wheeling.
52 *Cases of Pemphigus. J. B. Woodville, Fayette.
53 Gallstone. W. F. Waugh, Chicago.
54 Case of Prospothoracopagus. W. H. Sharp, Parkersburg.
55 *Arterio-arterial Anastomosis by Telescoping a Branch into a Trunk. W. W. Golden, Elkins.
56 What Mental Conditions Make a Testator Incapable of Making a Will. C. O. Henry, Fairmont.
57 *Infection from Oat Straw. J. L. Dickey, Wheeling.
58 Alcohol. R. M. McMillen, Wheeling.

48. **Uterine Curette.**—Ogden cautions against the indiscriminate use of the uterine curette, which, he says, has but a limited place at best.

50. **Skin Grafting.**—All the practical points in this communication are covered in articles by Dr. Cannaday on the same subject, which appeared in THE JOURNAL, June 2, 1906, page 1681, and in *The West Virginia Medical Journal*, April, 1907.

52. **Pemphigus.**—Woodville reports two typical cases, one occurring in an adult, the other in an infant. The latter case was probably one of pemphigus neonatorum.

55. **Arterio-Arterial Anastomosis.**—Golden describes a most interesting case, in which the circulation of the arm was cut off as the result of an injury. The axillary and brachial arteries were found anomalous. The subscapular branch was of a size almost equal to that of the axillary. The posterior circumflex was very small and sprang from a point very close to the origin of the former. There was no anterior circumflex. Immediately after giving off the posterior circumflex the axillary was much diminished in size, and continued of this size as the brachial to the junction of the upper and middle thirds of the arm, where it bifurcated into the radial and ulnar. The following procedure was resorted to: The posterior circumflex was dissected out for a sufficient distance, its distal end ligated permanently and its proximal end clamped temporarily between the fingers of an assistant. A small slit was then made in the brachial at a point within easy reach of the cut end of the posterior circumflex. A fine silk thread was passed through one lip of the cut edge of the latter. The ends of this thread were passed into the lumen of the brachial through the slit, and by means of needles brought through its wall from within outward, a short distance below the slit. Traction on the threads and manipulation soon telescoped the posterior circumflex into the brachial. One of the threads was then made to pass through a few fibers of the coracobrachialis externally, and the other through some loose cellular tissue internally, and the two tied, thus adding security against leakage. A dressing and splints were then applied. An examination of the extremity on the completion of the anastomosis showed the presence of arterial blood all through it.

In a few days the general condition of the patient became gravely septic. It soon became evident that the boy was suffering from an acute infective osteomyelitis affecting the fractured ends of the humerus. The arm was removed but the patient died a few hours afterward. Just before the member was severed a hasty examination was made of the parts concerned in the anastomosis. Everything was found in good condition, and there was no trace of leakage. The telescoped branch was pulled out and found bleeding.

57. **Infection from Oat Straw.**—Dickey reports the case of a man who was struck in the eyes by a splinter of oat straw. The splinter penetrated the cornea, passing into the anterior chamber. In spite of vigorous treatment, infection took place, and about two weeks after the accident the eye was enucleated.

Interstate Medical Journal, St. Louis.

April.

59 *Hemangioma Cavernosum of Upper Lip and Inner Side of Left Cheek. F. Reder, St. Louis.
60 Non-union or Vicious Union of Fractures. M. R. Barker, Chicago.
61 Operations on Stomach. W. Bartlett, St. Louis.
62 Infant Mortality and Its Cause in Manila, P. I. E. C. Shattuck, Manila.
63 Antibacterial Sera. O. H. Brown, St. Louis.

59. **Hemangioma Cavernosum.**—Reder tried ligating the tumor, but the bleeding was so severe that he was forced to desist. He then tried injecting boiling water into the tumor mass and in about three months the entire mass, originally as large as a hen's egg, had disappeared.

The Northwestern Lancet, Minneapolis.

April 15.

64 *Cardiovascular Regulations During and After Operation. H. W. Cook, Minneapolis.
65 Functional and Cardiac Neuroses. W. A. Jones, Minneapolis.
66 Pulmonary Tuberculosis. L. F. Schmauss, Mankato, Minn.
67 *Prescribing Alcohol. J. A. Crosby, Minneapolis.

64. **Cardiovascular Regulations.**—Cook emphasizes the importance of giving more attention to the general condition of patients previous to operation, and while the strain and shock of operative manipulation last. He discusses the value, during these periods, of blood pressure observations, especially when controlled by other signs and symptoms. He says that blood pressure observations afford the earliest and surest indication of oncoming shock or excessive hemorrhage during operation, and that if consecutive observations are made, as a matter of routine, fewer cases of profound shock will develop under surgical manipulation.

67. **Prescribing Alcohol.**—Crosby states his belief that the evil results of the prescription of alcohol are incalculably greater than any possible negative good that is derived from its use.

Cleveland Medical Journal.

April.

68 *Therapeutic Application of the Theories of Immunity. J. B. McGee, Cleveland.
69 *Bacteriologic Comparison of Milk Served in Bottles and by the Dip Method. H. O. Way, Cleveland.
70 Biographic Notes on Percival Potts. C. L. Cummer.

68. **Theories of Immunity.**—McGee reviews very briefly the present status of serum therapy.

69. **Serving Milk in Bottles and by the Dip Method.**—Way examined forty specimens of milk obtained from various dealers in Cleveland, and convinced himself that the results obtained support the theory that milk served by dipping from the can contains a greater number of bacteria than that handled in

bottles. Also that this excess can be accounted for in part by contamination from dust or organic matter, which drops into the can when it is opened to serve customers. On the other hand, the bottling of milk is also open to objections, but this method of serving milk is to be preferred to the dip method because it is possible to enforce careful washing and sterilization, thus reducing to a minimum the objections to bottled milk.

The Canada Lancet, Toronto.

April.

71 The Combined Scleroses. G. W. Howland, Toronto.
72 *Acute or Spontaneous Hemorrhages in the New-Born. H. T. Machell, Toronto.
73 *Therapeutics of Chronic Heart Disease. F. J. Wethered, Brompton, England.
74 *Suggestion in the Treatment of Anal Fistula. E. A. Hall, Victoria, B. C.
75 Sciatica. W. C. Abbott, Chicago.
76 Angioneurotic Edema Complicating Erythema Multiforme. N. E. Aronstam, Detroit.

72. **Spontaneous Hemorrhages in New-born Infants.**—Machell reports 14 cases with 7 fatalities. With 2 exceptions the bleeding began before the end of the third day; in 6 it began on the second day; in one on the third day, and in 2 before the end of the first day. In all the cases the bleeding began in a gradual manner. In none of the cases was it confined to one side. It came from the umbilicus, stomach, bowels, skin, mouth, muscle, scalp, etc. In none of the cases was there any evidence of sepsis in either mother or child; no history of syphilis in the parents, or of hemophilia. The treatment employed varied, consisting in the main of the administration of calcium chlorid, adrenalin solution and gelatin, hence the results obtained can not be ascribed to the treatment employed.

73. **Therapeutics of Chronic Heart Disease.**—Wethered discusses the means which may be employed in cases of chronic heart disease.

74. **Treatment of Anal Fistula.**—After cutting through the sphincters and curetting all granulation tissue, Hall leaves the rectal mucous membrane intact, while the parts are given rest by the section of the muscles. The mucous membrane protects the raw surfaces and also serves to retain dressings in position. The postoperative attendance also is much simplified.

American Journal of Orthopedic Surgery, Philadelphia.

April.

77 *Operative Procedure to Increase Flexibility in Cases of Lateral Curvature of the Spine. P. Le Breton, Buffalo, N. Y.
78 Mechanics of Lateral Curvature. H. O. Feiss, Cleveland.
79 *Treatment of Lateral Curvature of the Spine. F. E. Peckham, Providence, R. I.
80 *Plaster-of-Paris, W. G. Stern, Cleveland.
81 Genu Valgum Adolescentium. J. T. Watkins, San Francisco.
82 Infantile Paralysis. J. T. Watkins, San Francisco.
83 *Resection of the Knee with the Object of Obtaining a Movable Joint. G. G. Davis, Philadelphia.
84 *Case of Congenital Anterior Dislocation of the Hip. E. W. Ryerson, Chicago.
85 *Cases of Congenital Dislocation of the Hip. G. B. Packard, Denver, Colo.
86 *Case of Congenital Deformity of the Wrist. F. E. Peckham, Providence, R. I.
87 *Simple Apparatus for the Application of Plaster Jackets in Dorsal Recumbency. E. W. Ryerson, Chicago.
88 Exostosis in the Plantar Portion of the Os Calcis. E. H. Bradford, Boston.
89 Carriage for Stretcher Frame. J. C. Schnapps, Butte, Mont.
90 *Tuberculosis of the Skeleton. R. J. Terry and N. Allison, St. Louis.

77. **Increasing Flexibility in Scoliosis.**—The method employed by Le Breton may be described briefly as follows: An incision is made over the deep spinal muscles in the apex or angle of the dorsal curve, where there is the greatest resistance to passive motion. A section of muscle about three inches long is removed by cross cuts until three ribs are bared from their angles to the spinous processes. By blunt dissection these ribs are freed from the pleura, and sections removed from each by the Gigli wire saw from their angles to the beginning of the transverse processes of the vertebræ. The transverse processes are then cleared of muscular and ligamentous fibers by the knife. In doing this the anterior costo-transverse ligaments are cut, two or more, if within reach. The wound is sutured and a plaster corrective jacket put on after some method similar to Lovett's. The jacket can be replaced in a few days by another, which will induce further correction. The operation has for its object a partial restoration of flexibility, by section of some of the ribs close to the spine, section of a portion of the erector spinæ group in the apex of the curve, and division of some of the ligaments.

79. **Treatment of Scoliosis.**—Peckham obtains excellent results from the purely gymnastic treatment of scoliosis. The exercises are limited to the symmetrical ones, but Peckham insists that these be done with precision and accuracy. This and frequent attendance make for success.

80. **Plaster-of-Paris.**—Stern made a very careful study of the effects of various substances on the rate of setting of plaster-of-Paris and the subsequent strength and durability of the cast. He says that the orthopedic surgeon should select for his use a pure, well made and well kept unadulterated brand of plaster-of-Paris. Such a plaster will set in about seven minutes, which is fast enough for all ordinary work and yields a cast of the highest strength and durability. The use of starch crinoline bandages as the support in the application of the plaster does not interfere materially with either its rate of setting or its tensile strength. The various forms of wire gauze bandages yield a cast of increased tensile strength and, therefore, a lighter cast. Portland cement, when used with plaster-of-Paris in amounts varying from 10 to 20 per cent., yields a cast of superior hardness, strength and durability. It is especially adapted for use about the foot, ankle and thigh in the Lorenz operation.

Moisture disintegrates, softens and dissolves plaster casts. The water proofing of plaster casts by gauging the plaster bandages in a solution of sodium silicate is impractical. The finished cast should be thoroughly coated with sodium silicate solution after hardening. The hardening of plaster models, shells, corsets, etc., can readily be accomplished by dipping or painting them with hot alum solution. The addition or use of any accelerator yields a soft and friable set, and the cast is of insufficient tensile strength and resistance to abrasion to possess the lasting qualities demanded by the majority of orthopedic procedures.

The use of quick-setting dental impression plaster is also condemned for the same reasons. The regular slow-setting dental plasters are pure and unadulterated, and when kept in clean, dry containers, present the ideal material for orthopedic casts; they can be wound into bandages with starch, crinoline or wire gauze, and when especially heavy wear is expected, can be mixed advantageously with from 10 to 20 per cent. of Portland cement.

83. **Resection of Knee.**—Davis reports the case of a woman aged 23, who had a bony ankylosis of the knee at an angle of 130 degrees. Davis performed an operation and put on an appliance, with the result that nine months after the operation the joint could be extended and flexed at a right angle. The patient is able to walk without any support whatever.

84. **Congenital Anterior Dislocation of Hip.**—Ryerson records this case solely for the purpose of putting it on record. Only seven or eight similar cases have thus far been recorded.

85. **Congenital Dislocation of Hip.**—Packard reports 8 cases of congenital dislocation of the hip, 6 unilateral and one double. These 8 hips were operated on and the result was 4 anatomic replacements, 2 anterior transpositions and 2 with results uncertain.

86. **Congenital Deformity of Wrist Joints.**—In the case reported by Peckham the ulna extended backward and the space which should have been occupied by the ulna was filled with a thickened fibrous tissue. This was dissected out and the parts were restored to their normal position.

87. **Apparatus for Application of Plaster Jackets.**—The apparatus described by Ryerson is a modification of the Metzger-Goldthwaite apparatus. It is very cheap, costing about $2.

90. **Tuberculosis of Skeleton.**—Terry and Allison present the results of a study of the location of tuberculous foci in relation to posture. They compiled a record of 22,233 cases of tuberculous bone and joint disease. In 39.1 per cent. the localization was in the spine; in 31.4 per cent. in the hip, and the remaining 29.5 per cent. was divided among the knee, ankle, elbow, wrist and shoulder in the order named, the knee being involved in 1,827 cases and the ankle in 919 cases. The authors conclude that the structure and mechanism of the joints of the lower limbs and spine in adaptation to the erect pos-

ture, the relative instability of the body in this position, and the disposition of the weight to be carried, all combined to render the growing regions of the bones in question specially liable to injury.

Pennsylvania Medical Journal, Athens.

April.

91 Kinship of Medicine and Law from a Legal Standpoint. A. G. Dewalt, Allentown.
92 *Stenosis of the Pylorus. G. S. Dickinson, Erie.
93 *Differential Diagnosis and Treatment of Pyloric Stenosis. J. A. Lichty, Pittsburg.
94 Hyperchlorhydria and Its Treatment. H. D. Jump and H. K. Hill, Philadelphia.
95 *Gastroptosis with Special Reference to Treatment. J. J. Gilbride, Philadelphia.
96 Clinical Results from Examination of Feces After Intestinal Test Diet. C. R. Jones, Pittsburg.
97 Value and Safety of Surgical Exploration in the Abdominal Complications of Typhoid. J. B. Roberts, Philadelphia.
98 *Value of Skiagraphy in Surgery of the Nose. W. G. B. Harland and H. K. Pancoast, Philadelphia.
99 Relation of the Lymph Glands of the Mediastinum to Disease and Their Value in Early Diagnosis. W. S. Newcomet, Philadelphia.
100 The Recent Epidemic of Typhoid in Scranton. S. G. Dixon, Ardmore.
101 Early Diagnosis of Tuberculosis. J. W. Boyce, Pittsburg.
102 Roentgen Diagnosis in Tuberculosis. R. H. Boggs, Pittsburg.
103 Administrative Control of Tuberculosis. J. W. Edwards, Pittsburg.

92, 93, 95.—See abstract in THE JOURNAL, Oct. 20, 1906, page 1322.

98.—See abstract in THE JOURNAL, Oct. 6, 1906, page 1131.

Kansas University Science Bulletin, Lawrence.

March.

104 Heredity in Micro-organisms. M. A. Barber, Lawrence.

Albany Medical Annals.

April.

105 Typhoid in the Hudson River Valley. F. J. Mann, Poughkeepsie, N. Y.
106 Is Well Water a Cause of Typhoid? D. J. Hoyt, Poughkeepsie, N. Y.
107 Milk as a Causative Factor in Typhoid. L. H. Marks, Poughkeepsie, N. Y.
108 Laboratory Diagnosis in Typhoid. E. G. Littell, Poughkeepsie, N. Y.
109 The Fight Against Typhoid. J. H. M. A. von Tiling, Poughkeepsie, N. Y.

Mississippi Medical Monthly, Vicksburg.

April.

110 Difficulties in the Diagnosis of Our Commoner Forms of Fever in Their Earlier Stages. L. L. Sutherland, Rosedale.
111 Appendicitis. J. A. Crisler, Memphis, Tenn.
112 Hepatitis. J. F. McCaleb, McCaleb Station.

Journal of Outdoor Life, Trudeau, N. Y.

April.

113 The Struggle for Health. J. A. Miller, New York.
114 The Matter of Diet. A. W. Baird, New York.
115 Maryland's Onward March in Regard to Tuberculosis. H. B. Jacobs, Baltimore.
116 Novel and Successful Method of Self Rule Applied to Colorado Health Seekers. J. R. Cowen, Edgewater, Colo.
117 Discussion of Climate. S. A. Fisk.

Maryland Medical Journal, Baltimore.

April.

118 Hisfoplasmosis—a Fatal Disorder Found in Central America. S. T. Darling, Panama.

New Orleans Medical and Surgical Journal.

April.

119 Operative Surgery of the Spine and Cord. W. S. Bickham, New Orleans.
120 Menorrhagia and the Microscope. P. Michinard, New Orleans.
121 Case of Round Ligament Simulating Inguinal Hernia. E. T. Newell, St. Joseph, La.
122 Constipation Produced by Lacerations of Posterior Vaginal Wall. E. D. Martin, New Orleans.
123 Epistaxis as Symptom of Bright's Disease. A. McShane, New Orleans.
124 Sacroiliac Disease. E. S. Hatch, New Orleans.
125 Diabetes and Obesity, Causation and Treatment. A. Lorand, Carlsbad, Austria.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

April 27.

1 *Value of Blood Examination. H. B. Shaw.
2 *Maniacal Chorea. J. M. Finny.
3 *Value of an Abnormal Rise in the Average Level of the Diaphragm as a Guide to the Volume of Blood in Active Circulation. T. S. Wilson.
4 *Possibility of Actinomycotic Infection by the Vagina. H. E. S. Thompson.
5 *Plea for the Use of Oatmeal in the Dietary of Children. C. Watson.
6 Treatment of Tuberculosis by Marine Climates. W. Ewart.
7 Lesions of Spinal and Cranial Nerves Experimentally Produced by Toxins. D. Orr and R. G. Rows.
8 Regeneration of Nerves with Regard to Surgical Treatment of Certain Paralyses. B. Kilvington.

1. **Value of Blood Examination.**—Shaw emphasizes the absolute necessity of resorting to blood examination, not only in doubtful cases, but as a matter of routine. He says that the value of positive findings can in no way be belittled by the frequent occurrence of negative ones.

2. **Maniacal Chorea.**—The prominent features presented in the case reported by Finny were rheumatic pains in the legs for a fortnight, on which chorea supervened, and a mitral systolic murmur lasting up to the death of the patient. The pulse was quiet and regular until shortly before death, when it rose gradually to 140. The temperature was normal or subnormal until the day before death, when it reached 103.4 F. The choreic movements were slight for about forty-eight hours, and then became very violent. The psychic phenomena were prominent, out of all proportion to the motor. There were occasional spells of temporary mental calm. Medicinal treatment failed to have any effect on the course of the disease. The second case was without any history of rheumatism or heart disease. After 14 days of chorea, insanity and hallucinations of hearing and sight set in. The patient died in a week.

3. **Abnormal Rise in Level of Diaphragm.**—The object of Wilson's paper is to bring forward evidence in favor of the following propositions: 1. When, from any cause, the total volume of the blood in circulation is materially diminished, the total bulk of the intrathoracic viscera is correspondingly diminished by the relative emptiness of the thoracic blood vessels, especially those of the lungs. This diminution in the bulk of the intrathoracic contents shows itself by an elevation of the diaphragm, which has to be maintained at a higher average level than the normal in order to adjust the cubic content of the thorax to the altered volume of its contained viscera. 2. Such a rise of the diaphragm may frequently be detected clinically, and, when present, is of value in diagnosis, and affords important indication for treatment.

4. **Actinomycotic Infection of Vagina.**—Thompson summarizes two cases of this kind which he found reported in the literature.

5. **Oatmeal for Children.**—Some investigations made by Watson appear to show that an excessive oatmeal diet, in the form of porridge and milk, has a markedly stimulating effect on the thyroid gland of young animals. He thinks that there is no reason to doubt that a more moderate and more physiologic use of the same food would be followed by a stimulation in a degree which would be wholly beneficial. Further, he says that in these facts may be found the explanation of the value of oatmeal in the dietary of young children.

The Lancet, London.

April 27.

9 *The Outlook of the Medical Profession: Scientific, Social, Financial. J. G. Glover.
10 The Lymphatic System of the Cecum and Appendix. J. K. Jamieson.
11 *Goiters Removed Under Cocain Anesthesia. J. L. Thomas.
12 Seven Cases of General Peritonitis Treated by Operation. B. M. Bone.
13 *Treatment of Chronic Suppuration of the Middle Ear without Removal of the Drum Membrane and Ossicles. C. J. Heath.
14 Therapeutic Applications of Arsenic. J. Snowman.
15 Balneologic Treatment of Urinary Diseases. O. Kraus.
16 *Two Cases of Snakebite with Suggestion for Treatment. W. H. Haw.
17 Case of Poisoning by Coal Gas. J. Reid.
18 Case of Desquamative Erythema. A. Nobbs.

9. **Outlook of the Medical Profession.**—Glover says that, considering all things, the outlook of the medical profession is a fairly good one. He discusses briefly a few of the obstacles that by some are said to injure the outlook of medical practice as a calling. These obstacles are: 1, The growth of specialism; 2, the prevention of disease; 3, the license of unqualified practice; 4, the completion of certificated midwives, and 5, the abuse of medical charity.

11. **Goiters Removed Under Cocain Anesthesia.**—Thomas has removed 55 goiters, including four exophthalmic goiters, under local anesthesia (1 per cent. cocain solution), and one goiter

without any anesthesia, without any mortality. Of 17 thyroidectomies, including five for exophthalmic goiters, done under general anesthesia, three resulted fatally, one from sepsis, one from hyperthyroidism, and one from respiratory complications.

13. **Peritonitis Treated by Operation.**—The chief points in the treatment of the cases reported by Bone were: 1, Removal of the cause; 2, removal of the pus so far as possible by means of dry aseptic gauze swabs; 3, free drainage with tube and gauze wicks and plain strands of gauze; 4, care to be as gentle as possible in all manipulations; and 5, counteracting shock by all means possible. Strychnin and brandy were administered before and after the operation. Gastric lavage was employed before and after operation in cases in which vomiting was present. Large quantities of saline solution were administered after operation by rectum every four hours, sometimes with brandy added. Nothing was allowed by the mouth for the first twenty-four hours after operation except a teaspoonful of albumin water every half hour, and not this if any sickness was present. One-sixth of a grain of calomel was administered at once after operation and 1/6 of a grain every fourth hour until 1½ grains had been given. Turpentine enemata were used with the rectal tube passed high up to relieve flatus and distension. And, last, but by no means to my mind the least important, the patients were placed in the Fowler position by means of a bolster beneath the knees and a back-rest, the bolster being retained in position by two bandages tied to the bed head on either side.

16. **Treatment of Snakebite.**—Haw suggests that if the circulation be brought to a standstill at the seat of infection, it might be possible, if this is done early enough, to prevent any venom from entering the body. The poison would be imprisoned, as it were, and could be dealt with by permanganate of potash and incisions. Haw suggests, therefore, that in cases seen early enough the parts be frozen with ethyl chlorid during the making of the incisions and the rubbing in of permanganate of potash.

British Journal of Children's Diseases, London.

April.

19 *Epilepsy in Childhood: Its Relation to Other Diseases. G. S. Keeling.
20 Cure of Chronic Coryza of Scrofulous Children at La Bourboule. E. F. Christian.
21 Acquirement of Speech in Children. A. H. Gerrard.

19. **Epilepsy in Childhood.**—Keeling considers epilepsy in childhood as related to other diseases in the following aspects: Pathologic, etiologic, symptomatic and familial. A large number of cases is reported. He summarizes his findings as follows:

1. The pathology of epilepsy appears to resemble in some respects that of cerebral diplegia, chorea, paralysis agitans, neurasthenia, myoclonus and migraine. 2. Etiologically, rickets is an important factor in the causation of epilepsy. 3. A variety of epilepsy, which may be termed toxic epilepsy, is chiefly gastrointestinal in origin. 4. Reflex epilepsy is apparently rare; peripheral irritation probably plays a very small part in the production of the fits. 5. The effect of measles on epilepsy is uncertain. 6. Chorea is very rarely found associated with epilepsy. 7. Infantile paralyses, especially the congenital forms, are closely related to epilepsy. 8. An injury or a fright is frequently the exciting cause of a fit. Instrumental delivery may be followed by paresis with subsequent epilepsy. 9. Enuresis is an occasional sequela of epilepsy. 10. The disease known as night terrors is probably a mild form of epilepsy. 11. The three affections most frequently found in the family history of epileptics are epilepsy, migraine and alcoholism. 12. Migraine appears to be very closely allied to epilepsy, both in the family history and symptomatically. 13. The differential diagnosis between Ménière's disease and epilepsy is occasionally difficult.

Journal of Tropical Medicine and Hygiene, London.

April 15.

22 Psycho-physical Aspects of Climate. W. F. Tyler.

Bristol Medico-Chirurgical Journal.

March.

23 Prognosis. P. H. Pye-Smith.
24 Cerebrospinal Fever (Epidemic Cerebrospinal Meningitis). D. S. Davies and I. W. Hall.
25 Operations for Deflections and Spurs of Nasal Septum, with Special Reference to Submucous Resection. P. W. Williams.
26 *Two Cases of Ruptured Intestine. H. F. Mole.
27 *Case of Splenomegalic Cirrhosis in Child of Seven Years. E. C. Williams.
28 *Acquired Angioma of the Liver. A. L. Sheppard.
29 Sanatorium Treatment of Tuberculosis. D. J. Chowry Muthu.
30 Styracol. C. Reinhardt.

26. **Rupture of Intestine.**—Mole reports two cases of rupture of the intestine in which a successful operation was done. One patient was struck in the epigastric region. A laparotomy was done four hours after the accident and a large tear was found in the upper part of the jejunum, involving nearly one-half of the circumference of the bowel, but being placed obliquely to its long axis just beyond the duodeno-jejunal junction. The tear was closed with interrupted Halsted stitches and a few supporting Lembert stitches. The second patient was pinned against some railway sleepers by the arm of a crane. In this case the laparotomy was done six hours after the accident. The jejunum was completely torn through transversely in its whole circumference, and including two or three inches of its mesentery. The bowel was united with Lembert sutures. Both patients made speedy recoveries.

27. **Splenomegalic Cirrhosis.**—Williams presents the concluding notes on a case of this kind that occurred in a boy 7 years of age.

28. **Acquired Angioma of Liver.**—Sheppard reports very fully a case of acquired angioma of the liver, occurring in a man 50 years of age. The disease was of one year's duration, with an acute stage of about five months. There was complete absence of any past history of liver trouble, although there was a distinct alcoholic history.

Australasian Medical Gazette, Sydney.

March 20.

31 Insanity in Relation to Crime. J. Steell.
32 Echinococcus Alveolaris. E. A. Johnson.
33 Puerperal Infection: Thrombosis: Ligation of Right Ovarian Vein. Recovery. A. A. Lendon.
34 Case of Lymphatic Leukemia in a Little Girl. F. S. Tange.

Intercolonial Medical Journal of Australasia, Melbourne.

March.

35 Value of Roentgen Rays in the Diagnosis of Visceral Diseases. L. H. Harris.
36 Electricity as a Therapeutic Agent. S. S. Argyle.
37 Complications of Typhoid. A. V. M. Anderson.
38 *Two Cases of Gunshot Wound of the Upper Abdomen. W. Moore and H. H. Turnbull.
39 *Primary Suture of the Median Nerve—Subsequent Transplantation of Sciatic Nerve of Dog. R. A. Stirling.
40 *Interstitial Nephritis in Children. E. A. Mackay.
41 Iodism and the Peculiar Effects of Iodids. E. B. Allan.

38. **Gunshot Wound of Upper Abdomen.**—Moore reports two cases, one a gunshot wound of the right lobe of the liver, and the other a gunshot wound of the abdomen. Both patients were operated on successfully.

39. **Primary Suture of Median Nerve.**—In Stirling's case, there was a complete section of the median nerve with a hiatus of three inches between the divided ends. Attempts made to unite the ends of the nerve with strands of catgut proved futile. About three weeks after the accident the wound was reopened and the sciatic nerve of a small dog was grafted on the freshened ends of the median nerve. Twelve months after the operation the patient was able to bend and grip anything with the last three fingers of the hand; the arm was strong and could be moved very freely. The sensory functions were only partially restored.

40. **Interstitial Nephritis in Children.**—Mackay performed a decapsulation of the kidney on a 6-year-old girl, who was markedly rachitic. There was immediate relief from dangerous symptoms, but no statement can be made yet as to the ultimate effects of the operation.

Revue de Chirurgie, Paris.

Last indexed, page 979.

42 (XXVII, No. 1, pp. 1-160.) *Treatment of Impermeable, Non-cancerous Strictures of the Esophagus. (Rétrécissements infranch. non canc. de l'esophage.) F. Gross and L. Sencert.
43 Paraduodenal Hernias. (Hernies paraduodénales.) Vautrin.
44 Failure of Preventive Injection of Antitetanus Serum in Two Cases. (Tétanos.) F. Terrier and S. Mercadé.
45 *Extirpation of Large Aneurism of Common Carotid Artery. (Anévrismes supérieurs de la carotide primitive.) X. Delore.
46 *Dislocation of the Malar Bone. (Luxations de l'os malaire.) J. Okinczyc and G. Küss.

42. **Treatment of Impermeable, Non-Cancerous Stenosis of Esophagus.**—Gross and Sencert expatiate on the great progress that has been realized with direct visual inspection of lesions in the esophagus since the introduction of the esophagoscope. They give an illustrated description of a case of congenital stenosis in a lad of twelve, cured by internal esoph-

agotomy under visual inspection. The child had always been capricious in his diet, sometimes eating solid food like the rest of the family and at other times refusing all but fluid food. He was always very particular about chewing, and was undersized and feeble. An acute gastric disturbance caused aggravation of the symptoms, and an obstacle was found in the esophagus about 20 cm. from the teeth. The esophagoscope revealed at the third sitting under chloroform a valve-like membrane almost closing the lumen. A small instrument was specially constructed for the case, a hollow tube with an olive tip carrying a small concealed triangular knife which was made to protrude by turning a thumbscrew in the handle. Three slashes were cut in the crescent-shaped membrane and it retracted, leaving the lumen nearly the normal size. Four views of the membrane are given, before, during and after the operation, showing the precision and efficiency of the intervention under control of the esophagoscope. In another case a chronic spasmodic contraction of the esophagus was conquered by a single local application of cocain to the point of constriction. At once all disturbances ceased and no recurrence is known to date. Visual inspection showed the walls of the esophagus entirely normal. In five other cases of cicatricial stenosis of the esophagus progressive dilatation proved successful, all under direct visual control. In two others all attempts to introduce a sound proved futile and the stenosis was finally cured by introducing laminaria tents at the constricted point, progressively increasing their size. In two others, linear electrolysis relieved absolutely impermeable stenosis. All these cases are described in detail with illustrations of the endoscopic findings. The results were a complete cure in all but the last-mentioned case in which the attempts at dilatation were made without endoscopy, with fatal perforation as the result.

The esophagoscope reveals the orifice whose eccentric position is generally the cause of the failure to introduce the sound readily. Under direct visual inspection it is an easy matter to locate the opening and to dilate it with sounds. Endoscopy is not necessary after the opening has been dilated even a very little. In case of very rebellious constriction a laminaria tent can be introduced and left for twenty-four hours. It can then be withdrawn by the long string attached to it; the constriction is then generally so dilated that sounds can be used thereafter. If not, a second tent can be introduced, and so on. The patients do not find the tents painful. In exceptional cases electrolysis may be required, but it should be done only under visual inspection and very superficially as it is intended only as a preliminary to progressive dilatation with sounds. If the esophagoscope reveals a diverticulum or friable and fragile mucosa, rendering direct intervention dangerous, it is best to make an opening into the stomach and dilate the stricture in the esophagus from below. In case this is impracticable for any reason, the authors suggest that it might be possible to make an opening in the stomach, on the anterior aspect, 2 cm. below the cardia, through which the esophagoscope might be introduced and the stenosis inspected from below and treated as indicated. This technic has been found perfectly practicable on the cadaver, but has not yet been found necessary in the clinic. External esophagotomy and similar measures should not be considered until after repeated failure of all the above measures.

45. **Extirpation of Aneurism of Common Carotid.**—Delore's patient was a woman of 36 who had suffered from the aneurism for nearly eight years. There were no signs or history of syphilis, but the aneurism had gradually grown to be as large as the head of the fetus at term. The tumor did not pulsate and there was no expansion, but a murmur could be heard on all sides. There was some doubt as to the diagnosis, and it was thought that the mass was a very vascular sarcoma. Operation showed the tumor to be a fusiform aneurism of the common carotid. The artery was cut between two ligatures, and in attempting to enucleate the aneurism the sac was ruptured. On opening the sac widely, a jet of blood was seen coming from a vessel which proved to be the superior thyroid; on clamping this the hemorrhage ceased. The sac was extirpated. There was no shock or nervous symptoms, and the patient was in perfect health when seen again four months afterward. The specimen showed absolutely smooth walls without clots or fibrinous deposits. In 10 cases on record the mortality of extirpation of the sac was 10 per cent. He reviews the arguments against and in favor of extirpation.

46. **Luxation of the Malar Bone.**—The prognosis depends mainly on the concomitant lesions of the maxillary sinus. The asymmetry is slight. The dislocation seems to be irreducible. Attempts at reduction may even aggravate the lesions in the maxillary sinus. The main thing in treatment is to ward off infection of the sinus by persevering disinfection of the nasal fossæ.

Semaine Médicale, Paris.

47 (XXVII, No. 16, pp. 181-192.) *Sudden Death in Children. (La mort subite chez les enfants.) L. Cheinisse.
48 (No. 17, pp. 193-204.) *Roentgen Treatment of Syringomyelia. (Radiothérapie de la syr.) E. Beaujard and J. Lhermitte.

47. **Sudden Death in Children.**—Cheinisse protests against the assumption that a hypertrophied thymus is a frequent factor in the sudden deaths of children. He reviews the international literature on the subject of "thymic death" and shows that in many cases listed under this heading the thymus was not enlarged. Also that in many cases the sudden death was not accompanied by any signs of asphyxia—on the contrary, the children seemed to be quietly sleeping when found dead. Vibert found the thymus gland enlarged in 4 out of 15 cases of sudden death in children in which the symptoms indicated what is generally called "thymic death." Segadelli and Distefano ascribe the sudden death to a nervous reflex, and Lancereaux affirms that in the majority of instances of sudden or rapid death in children it is due to reflex inhibition of the respiratory or circulatory centers. Cheinisse adds that the cases in which a series of sudden deaths of this kind occur in a family is sufficient testimony as to the true nature of the phenomenon, namely, that it is the manifestation of an actual neuropathic taint. A number of such family series are on record, and consanguinity and alcoholism in the parents are frequent findings. Cullerre called attention fifteen years ago to sudden death in adults as a manifestation of a neuropathic inheritance. Cheinisse remarks further that owing to the present vogue of the thymic death theory, if the thymus is found enlarged, no search is made for further lesions. Rehn and others, however, published last year reports of cases of sudden or rapid death in children with eczema and autopsy revealed unsuspected serious lesions in the heart, as mentioned in THE JOURNAL, vol. xlvi, 1906, page 1806. Syphilis also may be the cause of sudden death soon after birth, as also tuberculosis, chronic intoxications, difficult labor and pathologic conditions in the mother, as Cheinisse illustrates by citations from recent literature.

48. **Roentgen Treatment of Syringomyelia.**—Beaujard and Lhermitte say that Roentgen treatment has entirely modified the clinical history of syringomyelia and totally transformed the prognosis. Raymond, Gramegna, Béclère and others have reported 6 cases in which Roentgen treatment was applied, and the present article adds 4 more to the list. The rays are applied to the spine and medulla oblongata, and the syringomyelic phenomena gradually subside. The motor disturbances feel the favorable influence first, the abnormal attitude of the hands is corrected, and the patient can use his muscles with practically normal strength, although well-established muscular atrophy is but little influenced. Trophic disturbances in skin and bones are arrested, he asserts, and muscles in incipient atrophy regain their normal strength and aspect. The return of sensibility in the skin, and the chronology of the restoration of the sensation of heat, contact and pain throw light on the nature of the affection. One patient personally observed was a young man free from pathologic antecedents until the first symptoms of syringomyelia developed four years before. Treatment was commenced in May, 1906, and the spine was exposed to the Roentgen rays; the dose was 3 H units, of 7 to 9 penetrating power, and the tube was 15 cm. from the skin. The exposure was generally repeated once a week, a total of 26 sittings in all. Treatment was suspended from time to time to avoid dermatitis. There

was no reaction on the part of the skin at any time beyond slight reddening. The rays were applied at a little distance each side of the median line of the spine, and again on the opposite side of the median line, thus giving the spinal cord a double exposure while the skin received only a single exposure on each side. In 1907 five additional sittings were given to cure the persisting facial hemianesthesia, exposing the larger part of the medulla. The sensory bulbar disturbances vanished by the fourth exposure with no by-effects except slight alopecia of the part exposed. Study of the sensory disturbances will indicate the exact regions in the spine that require treatment although the adjacent sound regions should be included. The exposures should be made as uniform as possible by covering with lead the parts that have been or are to be exposed.

Archiv f. Gynækologie, Berlin.

Last indexed, page 1305.

49 (LXXXI, No. 2, pp. 271-492.) Interstitial Corpus Luteum. (Interstitielle Eierstocksdrüse.) J. Wallart.
50 Reflex Reciprocal Relations Between Mammary Glands and Uterus, and Important Rôle of Reflex Influences in General, for both Physiology and Pathology of the Gravid and Non-gravid Uterus. (Reflectorische Wechselbeziehung zwischen den Brustdrüsen und dem Ut., etc.) E. M. Kurdinowski.
51 Case of Inoculation Carcinoma. (Impfcarc.) E. Zurhelle.
52 Behavior of Uterine Decidua in Ectopic Pregnancy. (Zur Frage nach der Entstehung des unteren Uterinsegmentes.) W. H. Schultze.
53 Adenomyoma of the Fundus of Uterus with Tuberculosis. (Adenomyoma corporis uteri mit Tub.) D. Grünbaum.
54 Anatomic Findings in Case of Pregnancy in Accessory Cornu. (Nebenhornschwangerschaft.) A. R. Limnell.
55 Principles for Introduction of Universal Nomenclature for Obstetrics. (Grundlinien zur Einführung allgemein gültiger Benennungen, etc.) C. Hennig.
56 Formations Resembling Ova in Ovarian Tumors. ("Eiähnliche" Bildungen in Ovarialtumoren.) A. Blau.
57 Estimation of Transverse Diameter of Pelvic Inlet According to Löhlein, tested in 74 Cases. (Schätzung der Transversa.) M. Steinbrecher.
58 *Deliveries Under Scopolamin-Morphin. (Scop.-Morph.-Wirkung bei Geburten.) W. Steffen.

58. **Scopolamin-Morphin Anesthesia for Childbirth.**—Steffen reviews the history of the use of scopolamin-morphin in obstetrics, and especially its application at Leopold's clinic. In 1903 it was tried by Leopold, but his unfavorable experiences in 20 cases caused him to abandon it. Since then Gauss' report of the results in 500 cases encouraged further trials, and it has been used now by Leopold in 300 cases out of a total of 1,335 deliveries during the last half of 1906. The final verdict of his experiences is as follows: "1, The method does not accomplish the desired results; 2, it can not be regarded as harmless for mother and child, and 3, it is not to be recommended for use in private practice, as the by-effects which are liable to develop make it necessary that medical aid can be summoned at any moment." The anesthesia in 20 cases induced by-effects such as weakness of the labor pains in 4 cases, making version necessary in 1 and forceps in 3 cases; in 5 there was no abdominal straining; in 3 vomiting occurred several times, beginning after the first dose; in 1 there was tormenting nausea; in 4 spots or darkness before the eyes; in 7 noticeable agitation; in 7 confusion amounting to delirium; in 7 increased sensitiveness; in 1 twitching in the limbs, and in 3 moderate postpartum hemorrhage from atony. In 5 cases the children were scarcely breathing and in 4 were in asphyxia. In some cases labor was unmistakably prolonged by the action of the anesthetics. Steffen refers to Toth's report of a death after 0.0003 gm. (1/200 grain) scopolamin, and to Hocheisen's case in which a severe attack of angina pectoris followed administration of 0.0005 gm. (1/120 grain) scopolamin to a woman with latent mitral stenosis, holding the patient at the brink of the grave for seven hours. Gauss states that he had to tie the hands of the patient in 7 cases, and that he kept one patient in the "twilight" scopolamin doze for 57 hours, giving a total dosage of 0.00375 gm. (⅛ grain) scopolamin and 0.03 gm. (½ grain) morphin. The details of the 20 cases presenting unfavorable features at Leopold's clinic are given. The dosage in 4 was 0.0003 gm. scopolamin and 0.01 gm. morphin; in 2 less than 0.00075 gm. scopolamin and 0.01 gm. morphin, and in 6 from 0.00075 gm. scopolamin and 0.01 gm. morphin to 0.00135 gm. scopolamin and 0.02 gm. morphin in 13 hours. The largest amount of scopolamin was thus 1/48 of a grain as the total dosage.

Berliner klinische Wochenschrift.

59 (XLIV, No. 10, pp. 265-296.) *Hysterical Insanity. (Hyst. Irresein.) Raecke.
60 Route of Infections in Lymphatics. (Gang. von Inf. in den Lymphbahnen.) F. Welemínsky.
61 *Retropharyngeal Tumors. (Retroph. Geschwülste.) M. Litthauer.
62 *Steam Sterilizer for Catheters. (Dampfsterilisator.) A. Bloch.
63 Physiotherapy of Tabes Dorsalis. (Physikal. Behandlung.) E. Tobias and E. Kindler. Concluded.
64 Sleeping Sickness. (Schlafkrankheit.) K. Kutscher.

59. **Hysterical Insanity.**—Raecke writes from Siemerling's clinic for nervous and mental diseases at Kiel describing the various forms of hysterical insanity. He groups them in three classes: 1. The form with excitement and stupor; delirium and somnambulism may be superadded. In this class belong the cases of continuous sleep—or rather lethargy—after a fright. 2. The form with depression, including attacks of distress, frightened delirium, stupor and "twilight" conditions, with occasional paranoid episodes and ideas of persecution, on a permanent basis of melancholia and hypochondria. Hysteria after an accident with emotional stress is particularly liable to assume this form. 3. The paranoiac type of compound hysterical insanity, which is built up mainly out of accumulated deliriums, imagined episodes, somnambulistic "twilight" conditions, eventually with the development of a dual personality. A systematized insane idea gradually develops in the majority of such cases, but it is amenable to criticism to a certain extent. A sudden outbreak of extensive ideas of persecution may occur in exceptional cases. The prognosis of hysterical insanity is always favorable. It never terminates in imbecility, but the duration of the affection and the liability to relapse are beyond all calculation. Only comparatively few cases of hysterical insanity come to the asylums, but these patients form an average of about 5 per cent. of the inmates in the larger cities. The previous history is the main reliance for diagnosis. Hysterical antecedents, the first appearance of the symptoms of the psychosis after great emotional stress, the regular return of the excitement at stated times, are all important for the diagnosis. The physical manifestations of hysteria are comparatively unimportant. During the psychosis it is well to note whether or not the symptoms can be readily influenced and if they subside under the influence of external happenings and whether or not they tend to superficiality, with lively interest in the surroundings and an evident desire to attract attention, with pronounced tendency to ennui, and with permanent integrity of the vegetative functions. In treatment the usual measures for hysteria are indicated, change of environment, rest and boredom, aided by a little suggestion. Hysteria in itself does not relieve the individual of responsibility for crime. The question in each case is to determine whether or not severe psychic disturbances existed at the time of the deed. The excitement of a lawsuit and, still more the injury from arrest and medicolegal examination, may first start a hysterical psychosis. Two cases of this form of insanity are described, affecting previously apparently healthy young men, in the navy. The rope at the head of the hammock became unfastened in one case, throwing the sailor to the floor; in the other a coal basket dropped while coaling, some of the coal hitting the sailor's brow. In neither case was the injury to the head serious, but the fright developed the psychosis and in the second case it returned later several times under emotional stress.

61. **Retropharyngeal Tumors.**—Litthauer adds 3 new cases from the literature to the 31 collected by Hellendall and summarizes the details. He then reports 2 from his own experience. In the first the tumor subsided under potassium iodid, while in the second case a fibrosarcoma measuring 5x6.5x9 cm. was successfully removed from a woman of 34. The tumor had been developing for 4 years, and its removal did not cure the existing paralysis of certain branches of the vagus and sympathetic nerves.

62. **Apparatus for Sterilizing Catheters.**—The advantages of the simple little apparatus of which an illustrated description is given, are said to be that several catheters can be sterilized at once without their sticking to each other and without their coming in contact with the boiling water. Only two or three

minutes are required for the sterilization. The catheters remain in the sterilizer until needed. The apparatus is convenient for the physician's office and also for patients to use at home.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed page 1642.

65 (XXXI, No. 11, pp. 305-328.) Origin of Membrane Encapsulating Hematocele. (Hämatokelenmembran.) C. Maennel.
66 *Eclampsia with 200 Convulsions. Recovery. (Eklampsie.) F. Engelmann.
67 (No. 12, pp. 329-352.) *Treatment of Placenta Prævia in General Practice. (Plac. praevia.) J. Füth.
68 To Prevent Leaving Sponges in Abdomen. (Zurücklassen von Kompressen.) L. Wechsberg.
69 Adhesion of Walls of Vagina or Uterine Cervix. (Conglutinatio vag. und orificii uteri.) I. Berczeller.
70 (No. 13, pp. 353-376.) Injury of the Cervical vertebræ in Difficult Breech Delivery. (Verletzungen der kindl. Halswirbelsäule.) J. Hofbauer.
71 Two Further Cases of Pregnancy After Küster's Operation for Inversion. (Grav. nach K. Inversionsop.) A. Keilmann.
72 (No. 14, pp. 377-400.) *Relations Between Fetal Heart Sounds and Sex. Intrauterine Breathing. (Beziehungen der föt. Herztöne zum Geschlecht., etc.) O. Büttner.
73 *Etiology of Ectopic Pregnancy. (Extraut.-Schwangerschaft.) F. Weisswange.
74 *Ovarian Carcinoma and Pregnancy. (Ov.-Karz. und Grav.) G. Zickel.

66. **Eclampsia with Recovery After 200 Convulsions.**—Engelmann's patient was a primipara of 22 with about 40 convulsions during or soon after delivery. About 500 c.c. of blood was withdrawn by venesection and 1,000 c.c. of salt solution injected, with 500 c.c. by the rectum. The convulsions ceased for four and a half days and then returned with extreme violence, 155 in 28 hours, with intervals of only 4 or 5 minutes. Withdrawal of 550 c.c. of blood, with rectal injection and retention of from 8 to 10 liters of salt solution, followed 4 hours later by withdrawal of 200 c.c. of blood with intravenous infusion of 1,500 c.c. of salt solution, when the patient was apparently moribund, was followed by cessation of the convulsions, improvement of the pulse and rapid recovery. Water was given copiously by the mouth and in repeated small rectal injections. The freezing point of the urine ranged from 0.94 C., 1.1, 1.3, 1.45 and 1.3, but on the day the patient was apparently moribund it had returned to 0.9. These findings show the precision of cryoscopy as an index of the functional capacity of the kidneys. The albumin findings were altogether unreliable, ranging from 4 per cent. the first day to traces later as the convulsions returned. A hot bath did not seem to do much good. This and the anuria observed in eclampsia suggest that Nature strives to retain water to dilute the toxins present in the organism. The case illustrates the benefits of systematic, copious flushing of the body with water as a means of treating severe eclampsia.

67. **Treatment of Placenta Prævia in General Practice.**—Füth has collected the records of 726 cases of placenta prævia occurring in the Coblentz district. These experiences all speak in favor of inducing delivery at once as soon as the diagnosis of placenta prævia is made, at least in private practice. Only 56 of the 726 mothers were primiparæ. The majority had borne from 2 to 6 children, and several had had as many as 15. In 5 instances placenta prævia had been observed at previous births, and in 6 the afterbirth was expelled before the child. The mortality was 20 per cent., mainly due to the long interval allowed to elapse between the first signs of hemorrhage and the delivery. Time was wasted on tamponing the hemorrhages as they appeared, leaving the woman weaker and less resistant each time, while the tampon proved a dangerous source of infection in many cases. In addition to these perils delivery finally occurred before medical aid could be summoned in 51 cases, with 16 deaths. All the women who succumbed to placenta prævia in the total 726 cases had had hemorrhage at one or more times before delivery, and all but 3 had applied for medical aid on account of these hemorrhages. The details of these fatal cases are tabulated, and Füth thinks that they speak strongly in favor of the assumption that the fatal result might have been averted if delivery had been induced after the first hemorrhage. In 10 cases in which he was called in consultation he acted on these principles, advising immediate delivery as soon as the diagnosis of placenta prævia had been established. As the woman could not be left without medical supervision after introduction of the metreurynter or combined version, these were never done until evening, so that the physician could have the night free for watching over the patient afterward. In 6 out of 7 cases everything had reached a favorable termination by the next morning. In one case spasmodic contraction of the os required an incision in the constricting ring before the uterus could be emptied.

72. **Relations Between Fetal Heart Sounds and Sex.**—Büttner has examined 63 pregnant women to note the character of the fetal heart sounds and their frequency. The average beat was 137.3 a minute in case of boys (32 women with 1,258 examinations), and in case of girls it was 141.4 a minute (31 women, with 1,259 examinations). If the beat is above 145 or lower than 135 the guess at the sex is liable to be correct in 65 per cent. of the cases. The fetal heart beat seems to grow slower during the last month of pregnancy. It is less frequent with comparatively small placenta than with a large placenta, and the placenta is, as a rule, smaller with boys than with girls, according to his experience. He has several times witnessed an unmistakable rising and falling of the abdominal wall of the pregnant woman in the region over the back of the fetus. This rhythmical rising and falling was in a tempo entirely distinct from the maternal respiration or pulse, and Füth remarks that it would be hard to convince any one who had observed it as he has, that it is not the result of intrauterine fetal breathing.

73. **Etiology of Extrauterine Pregnancy.**—Weisswange points out that gonorrheal infection is a frequent source of changes in the tubes which render ectopic pregnancy possible. Cases in which this occurs are listed as extrauterine pregnancy, and the underlying gonorrhea is overlooked. The wider his experience and the more extensive his studies on the subject, the greater the part he ascribes to gonorrhea in gynecologic affections.

74. **Pregnancy with Ovarian Carcinoma.**—Zickel's patient was a woman of 21 and the tumor was exceptionally malignant, as it recurred and proved rapidly fatal in less than four months. The possibility of a malignant tumor had scarcely been considered at the first operation, on account of the youth and the unusually healthful appearance of the patient. The tumor in the right ovary compressed the ureter completely, and an attempt was made through the vagina to restore the ovary to its normal place. During this maneuver the tumor ruptured and was removed. The left adnexa were left undisturbed, and pregnancy continued to term. The recurrence of the cancer at such an early date is ascribed to the rupture, spreading the contents of the growth throughout the abdominal cavity. Zickel warns that such attempts at reduction would better be avoided, even with the most apparently innocent growths, and ovariotomy be done without delay.

Mitteilungen a. d. Grenzgebieten d. Med und Chir., Jena.

Last indexed, page 1307.

75 (XVII, Nos. 3-4, pp. 249-532.) Histology of Appendicitis. (Wurmfortsatzentzündung.) R. Noll.
76 Pathology and Treatment of Appendicitis. (Blinddarmerkrankungen.) A. Albu.
77 *Pathology of Cysts of the Pancreas and Pancreatic Diabetes. (Pankreascyste und Pankreas Diabetes.) G. Grund.
78 *Bilateral Pneumothorax and the Independence of the Respiration in the Lungs in Respect to Pressure Conditions. (Doppelseitiger Pneumothorax.) D. Hellin.
79 *Gastrointestinal Hemorrhages After Extirpation of Spleen. (Kasuistik der isolierten Schussverletzungen der Milz.) V. Lieblein.
80 Resection of Thyroid and Pregnancy in Relation to Tetany and Nephritis. (Exp. Beiträge zur Frage der Epithelkörper-Funktion.) L. Caro.
81 *Hysteria in Surgery. (Hyst. in der Chir.) W. Kausch.

77. **Pancreatic Cyst and Pancreatic Diabetes.**—Grund reports a case of pancreatic cyst in a woman of 25. Several months before the first symptoms were observed the patient, then six months pregnant, slipped on the ice and another person tripped and fell on her abdomen. After a period of abdominal pains and vomiting all symptoms subsided, and a healthy child was delivered at term. A month later pain and vomiting recurred with icterus, with intervals of good health, with the gradual development of mild diabetes. About a year after the trauma a pancreatic cyst was operated on. The icterus subsided at once and permanently, but the diabetes persisted and within a few months assumed a comparatively severe

form. The metabolic findings are tabulated as recorded during the various phases of the case; they show that the functions of the pancreas in respect to the digestive processes were not essentially altered. Grund accepts this as evidence that the sugar-destroying and the digestive functions of the pancreas are quite independent of each other.

78. **Non-Fatal Bilateral Pneumothorax.**—Hellin reviews a number of cases from the literature in which bilateral pneumothorax existed and yet the patients recovered or survived for some time. He says that surgeons have adapted their intervention to the teachings of physiology, but the fact that an individual can survive with pneumothorax on each side upsets the teachings of physiology, and shows that surgery must take the lead and amend the teachings of physiology. He found in his experiments that when the opening into the pleura was made very gradually and only slowly enlarged, the animals survived with no apparent injury. But when he made a wide opening into the thorax suddenly, they almost invariably succumbed. Dogs are most sensitive in this respect, more so than man, but by gradual intervention the harmlessness of bilateral pneumothorax was abundantly established.

79. **Gastrointestinal Hemorrhage After Splenectomy.**—Lieblein protests against the assumption that removal of the spleen is always a simple and harmless operation. In two cases he has had occasion to observe severe gastrointestinal hemorrhage consequent on the splenectomy. In the first case the patient was a young man with a bullet wound in the spleen without injury of other organs—an attempt at suicide. On suspicion of injury of the stomach the abdomen was opened, but no damage was found except in the spleen, which was constantly bleeding and was extirpated. The patient rapidly recovered after the operation, but the next day began to vomit, and for six days vomited blood, with seven or eight melenic stools a day. The abdomen was not painful and there was no dulness. The patient was kept alive only by saline transfusion and camphor injections. After the seventh day the threatening symptoms subsided, but a week later convalescence was disturbed by thrombosis of the right femoral vein, which subsided in two weeks. In the second case a man was kicked by a horse and the spleen was found seriously injured and was removed. Gastrointestinal hemorrhages appeared the fourth day after the accident and operation, and they soon proved fatal. Busse published last year a list of ninety-six cases of postoperative gastrointestinal hemorrhage collected from the literature, but none was after splenectomy. Laing's case is the only one of which Lieblein knows, aside from his two cases, in which splenectomy was followed by this complication. But these cases are enough, he says, to warrant hesitation before removing the spleen. When the pedicle of the spleen is ligated the ligature should be applied close to the hilus to avoid including the branches of the splenic artery passing to the stomach—especially the vasa brevia. He urges suture of the spleen whenever possible rather than extirpation, and trusts that the technic of suture of this organ may soon be improved, suggesting Senn's technic described in THE JOURNAL, 1903, vol. xli, page 1241, or Payr's method of supporting the suture with perforated absorbable magnesium plates or by interposition of omentum. The blood findings in his cases after the splenectomy are described.

81. **Hysteria in Surgery.**—Kausch is professor of surgery, but was trained as a neurologist and served as assistant at the Strasburg neurologic clinic before devoting his energies to surgery. He thinks that this special training renders him peculiarly qualified to discuss the subject of hysteria as it affects surgery. He gives a large number of instances of visceral hysteria from his own and others' experience, devoting special attention to hysterical ileus. In ten cases an operation was performed and in fifteen operation was refused. He includes in the list only the cases with fecal vomiting. The general condition did not correspond with the severity of the ileus symptoms, as a rule. The duration of the ileus varied widely, from two days to six years being the range. Two of the patients were men and one a boy. The age was generally between 20 and 25, but the list includes one woman of 51. He thinks that there are reasons for assuming that antiperistalsis has something to do with the explanation of hysteric ileus, as also spasmodic contraction of the intestine and localized paralysis. Antiperistalsis would explain the vomiting of actual scybala, while spasm and paralysis can explain at most the vomiting of fluid intestinal content. In case of antiperistalsis the abdomen is sunken, while with spasm or paralysis it is distended, as a rule. He is convinced that careful, tranquil observation will always differentiate the hysterical form, watching the patient closely, using the stomach sound and, in case of signs of fistula between stomach and colon, trying insufflation of the intestines. A fistula which allows large scybala to pass would also allow the passage of water and air. Operative treatment of hysterical ileus or appendicitis does little if any good. Other hysterical affections reviewed are those simulating organic trouble in the liver, kidneys, ovaries, vagina, uterus, etc. He believes in the possibility of true hysterical polyuria, and the French have described a number of cases of hysterical anuria or ischuria, but he thinks that the supposed prolonged anuria is generally due to some trick on the part of the patient. Close supervision and catheterization at unexpected times will generally reveal the deception. Anuria can not continue long without signs of uremia. Cases are known in which the patients drank their urine, which might explain some of the cases of supposed anuria and urine vomiting on record. Spasmodic contraction of the sphincter of the urethra may be so complete as to prevent the passage of a sound, but generally the catheter can readily be introduced. Hysterical patients are particularly prone to retention of urine, but the physician should refrain from catheterizing them. If left alone and unwatched the bladder usually is evacuated sooner or later, and if not, the patient will soon get relief in a hot bath. In Bardol's case the retention persisted for months. Operations for the relief of splanchnoptosis seldom benefit hysterical patients except when there are symptoms from direct traction on certain organs. Kausch discusses further hysteria simulating organic affections of the brain, ear, spinal cord, throat, lungs, etc. In hysterical hemoptysis the blood issues from the mouth, nose or throat, generally from intentionally produced injuries. He has little belief in true hysterical hemorrhages, but admits that there are unmistakable cases on record of pseudo-phthisis, pseudo-meningitis and pseudo-epilepsy in hysterical individuals.

Virchow's Archiv, Berlin.

Last indexed 1468.

82 (CLXXXVII, No. 3, pp. 351-533.) Plasmosomic Bodies and Metachromatic Stain for Protoplasm of Mononuclear Leucocytes in Blood and in Blood-forming Organs. (Plasmosomische Körper, etc.) A. Ferrata.

83 Histologic Study of Organs in Case of Fat Tissue Necrosis. (Organe bei Fettgewebsnekrose.) O. Berner.

84 2 Cases of Varicose Cavernous Tumors of Interauricular Septum. (Var.-kav. Geschwülste des septum atriorum.) G. Weber.

85 Anatomy and Embryology of Dual Ureter Formation. (Ureterverdoppelung.) R. Meyer.

86 Experimental Changes in the Liver Induced from the Gastrointestinal Canal and the Changes Found Therewith in Other Abdominal Organs. (Veränderungen der Leber.) L. d'Amato.

87 Aberrant Mesodermal Tumors at Lower End of Urogenital Apparatus. (Heterotope mes. Geschwülste, etc.) J. G. Mönckeberg.

88 Influence on Structure of Pulp of Tooth of Severing the Nerve. (Nervendurchschneidung und Zahnpulpa.) Brubacher.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed page 1556.

89 (LXI, Nos. 5-6, pp. 389-540.) Cause of Relief in Affections of Respiratory or Circulatory Organs on Change from Reclining to Sitting Posture. (Ursachen der Orthopnoe.) L. Hofbauer.

90 Case of Diffuse Lymphadenoid Metaplasia of Bone Marrow. (Lymphad. Metaplasie des Knochenmarkes.) H. Rubinstein.

91 *Pathogenesis of Pernicious Anemia, with Special Regard to Bothriocephalus Anemia. (Pathogenese der pernizlösen Anämie.) T. W. Tallqvist.

92 Dicrotic Pulse with Aortic and Mitral Insufficiency. (Dikrotie bei Aorten- und Mitralinsufficienz.) R. Geigel.

91. **Pathogenesis of Pernicious Anemia.**—Tallqvist has found in the sexually perfect segment of a tenia—the *Bothriocephalus latus*—a lipoid substance with powerful hemolytic properties. This substance is not excreted; does not induce the production of an antibody; resists boiling, and resists the action of the protolytic ferments. When one of these segments becomes disintegrated this hemolytic substance is liberated,

and this is sufficient to explain the anemia observed in consequence of the presence of this parasite. No other tapeworm has this hemolytic substance. He also announces that substances which appear to be closely allied to this lipoid substance in this form of tenia are normally present in certain organs in man, especially in the mucosa of certain sections of the digestive tract and some of its glands. He thinks it probable that these substances can become so altered in quality or quantity under certain conditions that the lipoid substances become pathologic and induce direct hemolysis, leading to the clinical picture of cryptogenic pernicious anemia, in the absence of any gastrointestinal parasite.

Gazzetta degli Ospedali, Milan.

Last indexed, page 183.

93 (XXVII, Nos. 144-147, pp. 1513-1560.) *Pulsation of the Wall of the Thorax with Pleural Effusions. (Empiema pulsante.) S. Livierato.
94 *Saturated Solution of Bichlorid of Mercury for Local Injection in Syphilis. (Sublimato corr. in soluzione satura nella sifilide.) Puglisi Sante.
95 Tardy Consequences of Appendicitis. (Conseguenze dell' app.) D. Biondi.
96 *Blood Pressure in the Tuberculous. (Pressione sanguigna nella tub. polmonare.) G. Boschi.
97 *Syphilitic Gastralgia. (Gastralgia sifilitica.) G. L. Piola.
98 Sardinian Fermented Milk. (Miciuratu in Sardegna.) A. Bianco.
99 (Nos. 150-153, pp. 1577-1624.) *Operative Treatment of Accumulations of Fluid in the Fallopian Tubes. (Trat. op. delle raccolte tubarie.) B. Formiggini.
100 *Suspension of Kidney by Rib. (Nuovo metodo di nefropessi.) G. Monzardo.
101 *Salomon's Test for Gastric Cancer. (Prova di Salomon.) F. De Marchis.
102 Harmlessness of Paraganglin by the Mouth. (Inoculta della paraganglina per via gastrica.) N. De Paoli.
103 Electricity in Treatment of Heart Disease. (L'elettricita nella terapia delle malattie di cuore.) G. Galli.
104 Quantitative Relations Between Uric Acid in Urine and Leucocytes in Blood. (Acido urico urinario e leuc. del sangue.) G. Spadaro.
105 *Antibodies in Blood in Case of Echinococcus Cysts. (Cisti da echinococco.) Ghedini.
106 Organized Ferments of the Intestine. (Ricerche sui fermenti org. dell' intestino.) C. Molon and G. Tanfani.
107 Passage of Mercury from Mother to Fetus. (Passaggio del merc.) A. Conti and P. F. Zuccola.

93. **Pulsation of the Wall of the Thorax with Accumulations in the Pleura.**—Livierato reports two cases of pulsating empyema and summarizes sixty-four other cases found in the literature. He ascribes the pulsation to the accumulation of fluid in the pleura under considerable pressure.

94. **Injection of a Saturated Solution of Corrosive Sublimate in Syphilis.**—Sante reports four cases of tardy local manifestations of syphilis in which ordinary mercurial treatment seemed to produce no effect. He then made a single injection of three-quarters of a Pravaz syringeful of a saturated solution of corrosive sublimate. After suspension of all treatment then for three or four days, he resumed the ordinary injections and rapid recovery was then evident. Corrosive sublimate dissolves in water in a proportion of 1 to 16, and the saturated solution was thus sixty times his usual dosage. He added a little sodium chlorid to the solution, and made the injection in the buttocks. No by-effects were observed and he urges others to interpose this single strong injection in cases that do not respond to the ordinary technic.

96. **Blood Pressure in Tuberculosis.**—Boschi found the blood pressure lower than normal in 71 per cent. of the tuberculous patients examined; tension above normal was never noted in any instance.

97. **Syphilitic Gastralgia.**—Piola's patient suffered from atrocious pain in the stomach for about a year and all the diagnostic tests failed to reveal anything abnormal in the stomach, anatomic or functional, except the pains. No measures gave relief until mercury was tentatively tried. In order to exclude the influence of suggestion, the patient was told that before commencing a new system of local treatment his general system needed toning up for two weeks, but his pains would persist. He had had a mild syphilitic infection ten years before. To his surprise he found the pains were much relieved by the end of the third day of mercurial treatment, and he was soon completely cured.

99. **Operative Treatment of Salpingitis.**—Formiggini reviews the literature on this subject and describes two cases treated by lateral laparotomy and by suturing the pus pocket to the skin after evacuation. The uterus was curetted at the same time, and the salpingitis and endometritis both rapidly healed. He thinks that this is the ideal technic in cases with extensive adhesions. He waits until the acute phase is past before attempting operative intervention.

100. **Fixation of Kidney by Rib.**—Monzardo incises to expose the last rib and mobilizes the periosteum of the middle third of the rib. He then cuts the rib across, following a very slanting line, the upper end above and on the inner aspect of the rib. The half of the rib still connected with its articulation is then slit lengthwise up to 4 cm. of its attachment and the upper half is excised. This leaves a long, narrow strip of rib, and this strip is passed through the cortical substance of the kidney just below the capsule. The protruding end is fastened to the other half of the rib, which was left intact. The slanting end of this intact half of the rib offers a support to the bone protruding from the kidney, so that it can easily be tied in place and soon heals firmly. The results in two cases in which this technic was followed have been extremely satisfactory.

101. **Salomon's Test for Cancer of the Stomach.**—De Marchis describes the findings in 22 cases of various stomach affections in which this test was applied. (Its technic was described in THE JOURNAL, 1903, vol. xli, page 694.) He found the findings corroborative of other reliable tests and that they were always confirmed by the clinical course of the cases.

105. **Antibodies in Echinococcus Affections.**—Ghedini states that in a case examined the blood serum showed unmistakable evidence of the presence of antibodies. The hemolytic blood test is, therefore, able to differentiate an echinococcus affection in dubious cases if further experience confirms the testimony in the case described. The patient was a lad of 13 with a large echinococcus cyst in the liver.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

PRACTICAL MEDICINE SERIES, Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. III. The Eye, Ear, Nose and Throat. Edited by C. A. Wood, C.M., M.D., D.C.L., A. H. Andrews, M.D., and G. P. Head, M.D. Series 1907. Cloth. Pp. 353. Price, $1.50. Chicago: The Year Book Publishers.

TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. By Arthur R. Edwards, A.M., M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Northwestern University Medical School, Chicago. Illustrated. Cloth. Pp. 1328. Price, $5.50 net. Philadelphia and New York: Lea Bros. & Co., 1907.

THIRTY-SEVENTH REPORT of the Central Free Dispensary of West Chicago, at Rush Medical College. For the Period of Four Years, Extending from Jan. 1, 1903, to Dec. 31, 1906. With the Charter and By-Laws. Located in Senn Hall of Rush Medical College, 757 W. Harrison Street. Paper. Pp. 29.

ESSENTIALS OF HISTOLOGY. Descriptive and Practical. For the Use of Students. By E. A. Schäfer, Sc.D., F.R.S., Professor of Physiology in the University of Edinburgh. Seventh Edition. Cloth. Pp. 507. Price, $3.50 net. Philadelphia and New York: Lea Bros. & Co., 1907.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR. By E. B. Gleason, M.D., LL.D., Clinical Professor of Otology in the Medico-Chirurgical College, etc. Illustrated. Cloth. Pp. 556. Price, $2.50 net. Philadelphia and London: W. B. Saunders Co., 1907.

DERMATOLOGISCHE VORTRÄGE FÜR PRAKTIKER, Heft 18. Kokkogene Hautleiden. (Furunkel, Erysipel, etc.) von Dr. S. Jessner. Paper. Pp. 102. Price, 1.8 mk. Würzburg: A. Stubers Verlag (Curt Kabitzsch), 1907.

ULCERATION OF THE CORNEA. By Angus Macnab, B.A., B.Sc., etc., Chief Clinical Assistant, Royal London Ophthalmic Hospital. Cloth. Pp. 196. Price, $2.00 net. New York: William Wood & Co., 1907.

WORRY THE DISEASE OF THE AGE. By C. W. Saleeby, M.D., F.R.S., 7din. Cloth. Pp. 311. Price, $1.35 net. New York: Frederick Stokes Co., 1907.

SPECIAL REPORT On the Occasion of the Seventh Anniversary of the Groszmann School, Watchung Crest, Plainfield, New Jersey. Paper. Pp. 20.

STUDIES FROM THE ZOOLOGICAL LABORATORY of the University of Nebraska. No. 70. Iconographia Parasitorum Hominis. By Henry B. Ward. Paper.

NUGAE MEDICINAE. By John Godfrey, surgeon, P. H. & M.-H. S. Cloth. Pp. 192. Detroit: Richmond & Backus Co., 1907.